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**HIGHLEAD**

**GC20528 series**

**Twin-Needle High Speed Split Needle Bar Lockstitch  
Sewing Machine**

**Instruction Manual**

**Parts Catalog**

**SHANGHAI HUIGONG NO.3 SEWING MACHINE FACTORY**

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## **PRECAUTIONS BEFORES STARING OPERATION**

### **1. Safety precautions**

- 1) When turning the power on, keep your hands and fingers away from the area around/under the needle and the area around the pulley.
- 2) Power must be turned off when the machine is not used, or when the operator leaves his/her seat.
- 3) The power must be turned off before tilting the machine head, installing or removing the “V” belt, adjusting the machine, or when replacing.
- 4) Avoid placing fingers, hairs, bars etc. near the pulley, “V” belt, bobbin winder pulley, or motor when the machine is operation. Injury could result.
- 5) Do not insert fingers into the thread take-up cover, under/round the needle, or pulley when the machine is in operation.
- 6) If a belt cover, finger guard, and/or eye guard are installed, do not operate the machine without these safety devices.

### **2. Precaution before Starting Operation**

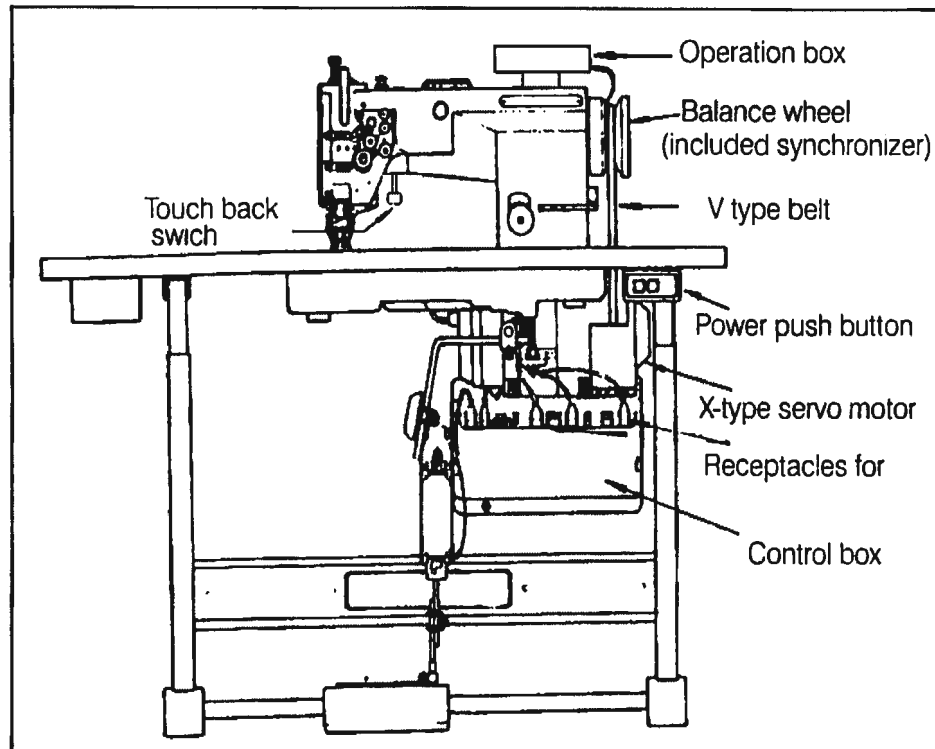
- 1) If the machine’s oil pan has an oil sump, never operate the machine before filling it.
- 2) If the machine is lubricated by a drop oiler, never operate the machine before lubricating.
- 3) When a new sewing machine is first turned on, verify the rotational direction of the pulley with the power on. (the pulley should rotate counterclockwise when viewed from the pulley.)
- 4) Verify the voltage and (single or three) phase with those given on the motor nameplate.

### **3. Precaution for Operating Conditions**

- 1) Avoid using the machine at abnormally high temperature (35°C or higher) or low temperature (5°C or lower). Otherwise, machine failure may result.
- 2) Avoid using the machine in dusty conditions.  
Avoid using the machine in areas where too much electrical noise, resulted from the high-frequency welder and others, is generated.

## PREPARATION FOR OPERATION

Overall view of assembled sewing machine



### 1. Power cable connection

#### 1) Connection to Power Supply

When connecting the power supply connector to the control box, the connector should be completely plugged in the proper receptacle after confirming the connector type and matching direction.

- A. In case of three-phase electrical power system, the "U" phase should be connected to the red lead, the "V" phase to the white lead, and the "W" phase to the black lead. The motor rotary direction depends, however, upon the setting of the internal switch in the control box as described in Paragraph 1-(3)

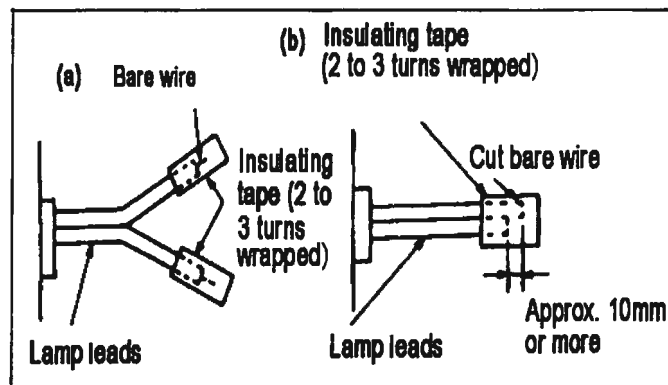
**CAUTION: The green wire must be connected to the ground terminal in order to ground the motor properly.**

- B. The appropriate power fuse capacity is as follows.

|              |            |     |
|--------------|------------|-----|
| Power supply | 200V-240V: | 10A |
|              | 100V-120V: | 15A |

#### 2) Lamp Leads

- A. When installing the illuminating lamp (6V, 15-20W), The connecting wire is attached on the back of the Control box. It should be removed and connected by removing the insulating tube from the wire and stripping properly.



The wire connections should be, then, insulated by wrapping insulating tape on the wires.

**CAUTION: The power switch must be Turned off before connecting the lamp.**

- B. When the illuminating lamp is not used, the end of the lamp leads must be insulated as (a) or (b) as shown in the figure on right side. If a short circuit occurs failing to insulate, the transformer in the control box will be possibly burned out.

**CAUTION: The illuminating lamp must not be connected with any heater, such as a foot warmer and others, in parallel. Otherwise, the load capacity will be exceeded. It may cause transformer winding burned out.**

### 3) Rotary direction

It is possible to change the rotary direction of the motor by removing the rubber cap from the bottom left side of the front cover on the control box, and push the internal direction selector switch. The built-in lamp in the internal switch is off when the motor is rotating counterclockwise as facing to the motor pulley, and on when rotating clockwise. The rotary direction has been set to counterclockwise as facing to the motor pulley, matching with the machine prior to shipping

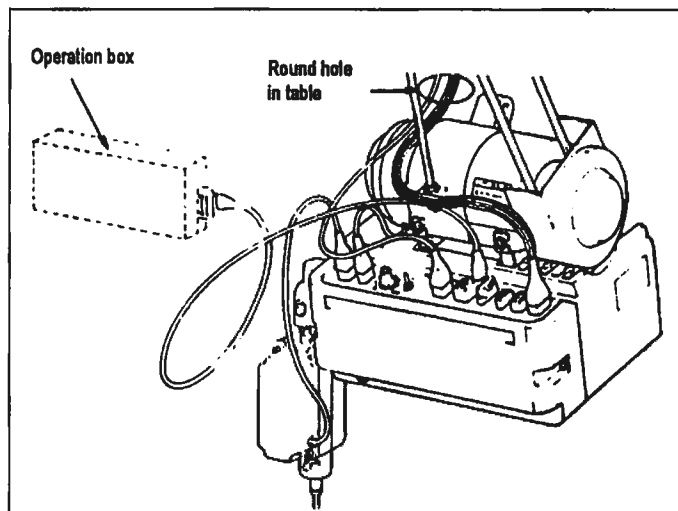
## 2. Connection of control box

The control box should be connected as shown to the right.

- Note:** (1) Be sure to turn the power switch off for safety before connecting or disconnecting the connectors.  
(2) The combination of the machine heads with the motor control panels are specified below.

Use special care for the correct

combination when replacing the machine head or motor control panel.

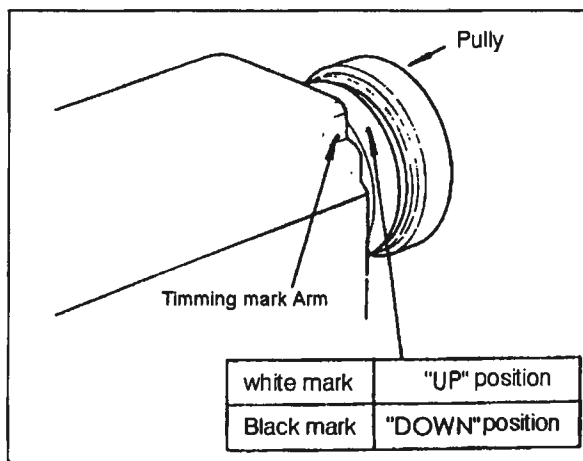


## 3. Adjustment of needle bar stop position

### 1) Adjust of "UP" position

When the pedal is kicked down by heel, the machine stops at "UP" position. If the marks deviate larger than 3 mm, adjust as follows.

- Disconnect the plug (12 pins) of cable from the machine head.
- Run the machine and stop at "UP" position.
- While holding the pulley, insert the "adjusting

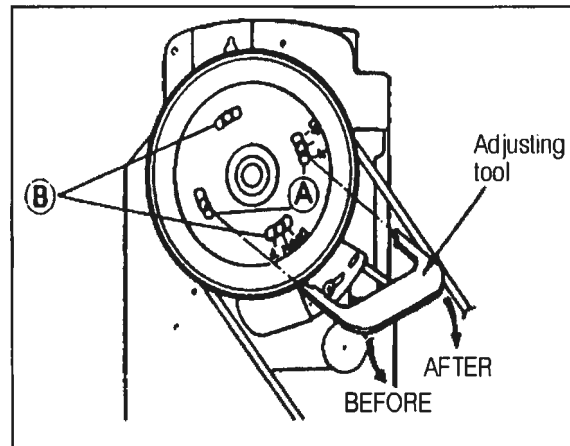


tool" in the hole" A", then remove the tool.

2) Adjust of "Down" position

When the pedal is "Neutral" the machine stops at "Down" position. If the marks deviate large than 5 mm, adjust as follows.

- a) Disconnect the plug (12 pins) of cable from the machine head
  - b) Run the machine and stop at "Down" position.
  - c) While holding the pulley, insert the "adjusting tool" in the hole "B", then remove the tool.
- 3) Confirm the stop operation, then set the plug (12 pings) coming from the machine head into the receptacle.



## CAUTIONS ON USE

### 1. Oiling (1)

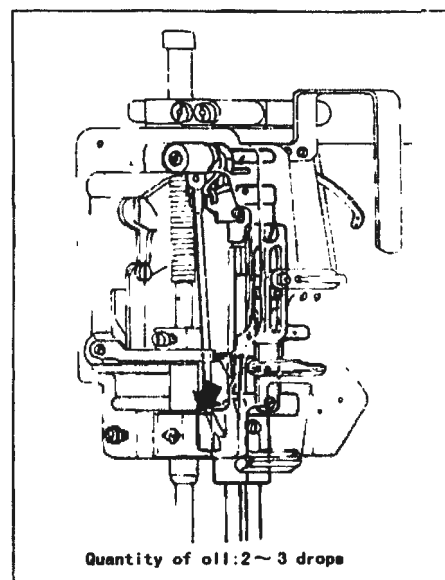
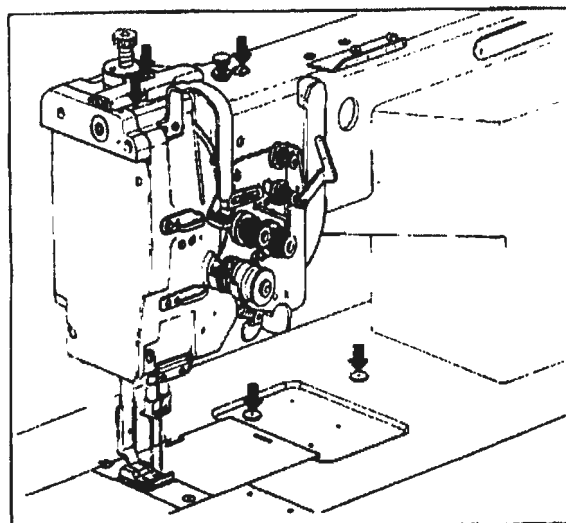
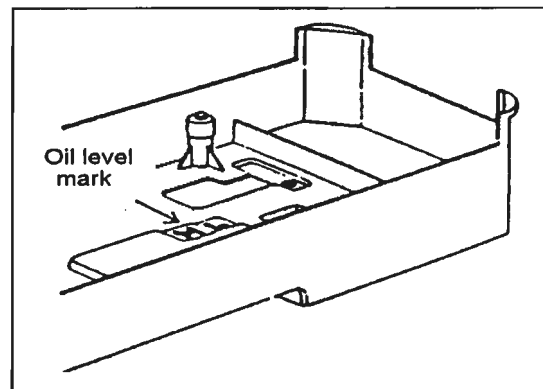
Fill the oil reservoir with oil up to "H" mark.

Oil level should be periodically checked. If oil level is found below "L" level replenish oil to "H" level .

**For oil, Use white spindle oil.**

### 2. Oiling (2)

When a new sewing machine is used for the first time, or sewing machine left out of use for considerably long time is used again, replenish a suitable amount of oil to the portions indicated by arrow in the below figure



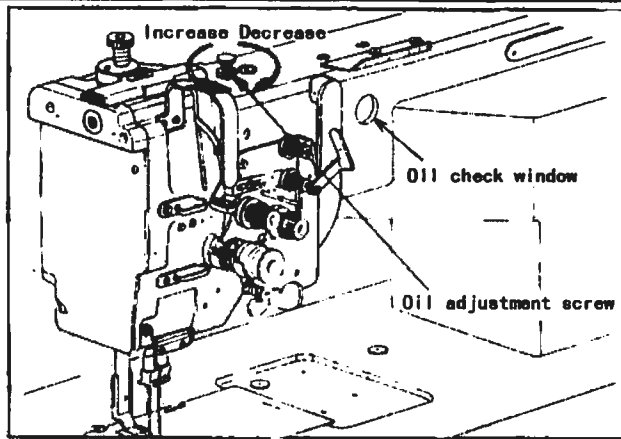
### 3. Oiling condition

- (1) See dripping of oil during operation through the oil sight window to check oiling condition in the

machine arm.

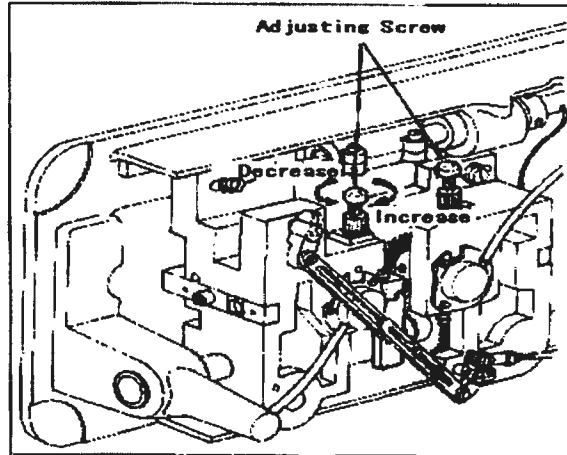
- (2) Please use the oiling adjusting screw with respect to oiling to take-up lever mechanism.

#### 4. Adjustment of oiling to rotating hook



#### 5. Cautions on operation

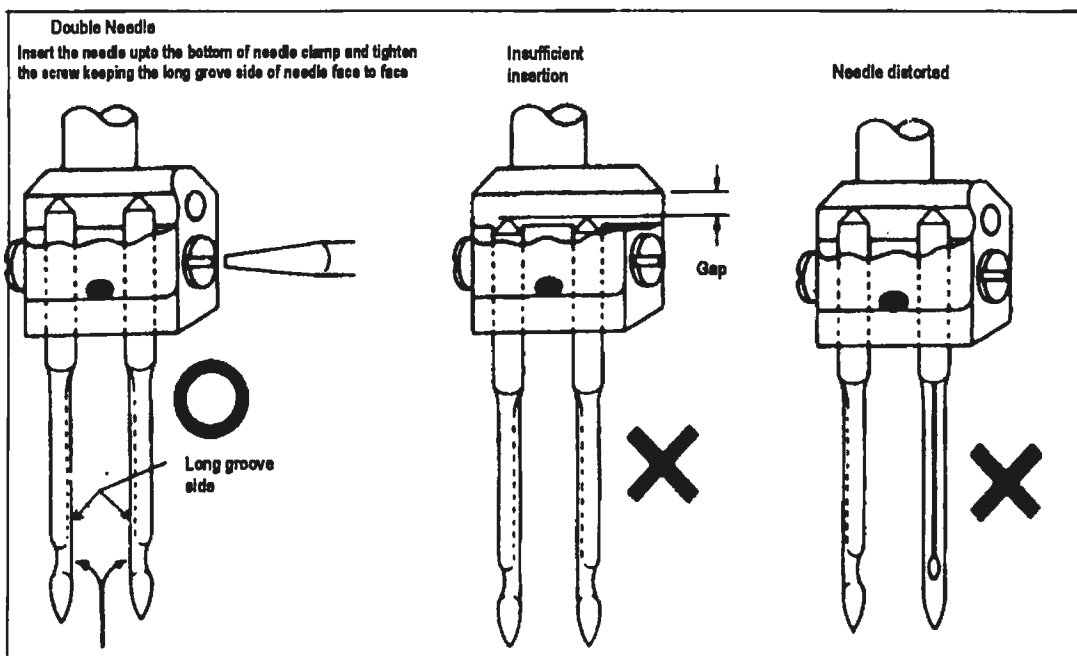
- a) When the power is turned on or off, keep foot away from the pedal.
- b) It should be noted that the brake may not work when the power is interrupted or power failure occurs during sewing machine operation.
- c) Since dust in the control box might cause malfunction or control troubles, be sure to keep the control box cover close during operation.
- d) Do not apply a multimeter to the control circuit for checking; otherwise voltage of multimeter might damage semiconductor components in the circuit.



## OPERATION

### 1. Installation of needles

**Note:** Before installing the needles, be sure to turn off the power.



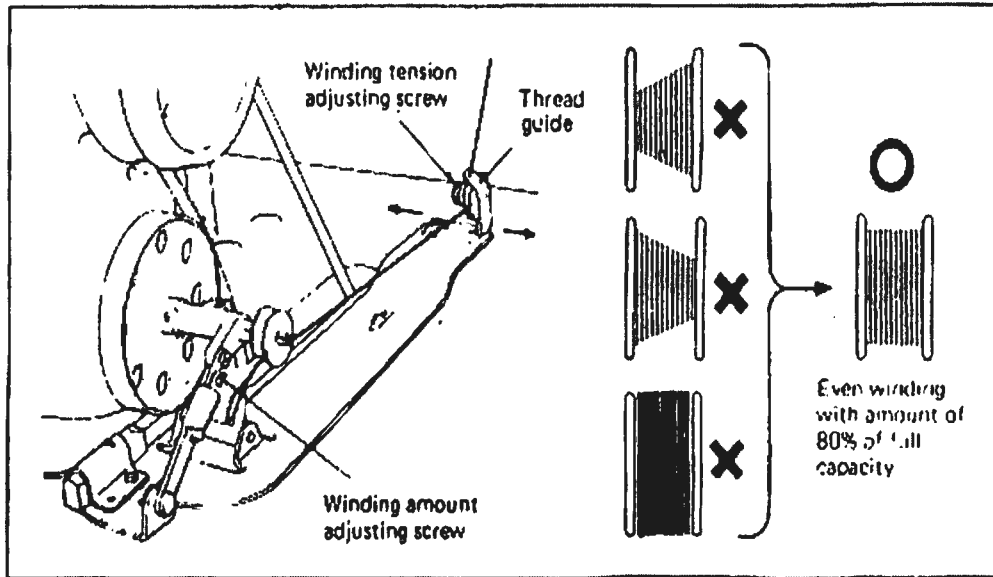


## 2. Winding of bobbin thread

**Note:** When bobbin thread is wound, keep the presser foot lifted.

### Adjustment:

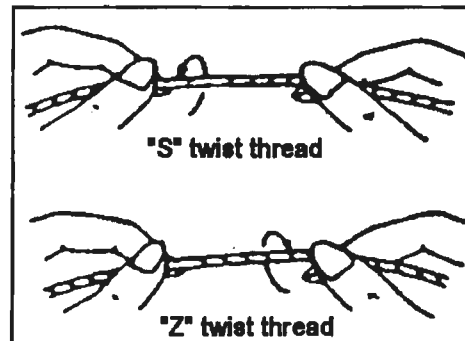
|                         |   |
|-------------------------|---|
| Tension of wound thread | Slack winding is recommended for polyester thread and nylon thread.   |
| Conically wound thread  | Move the thread guide toward smaller diameter of wound thread layer.  |
| Length of wound thread  | Loosen the thread length adjusting screw to increase length of thread and tighten the screw to decrease length of thread. |



## 3. Selection of thread

It is recommended to use "S" twist thread in the left needle (viewed from front), and "Z" twist thread in the right needle. When discriminate use of needle threads is impossible, use "Z" twist thread in both the needles.

For bobbin thread, "S" twist thread as well as "Z" twist thread can be used.



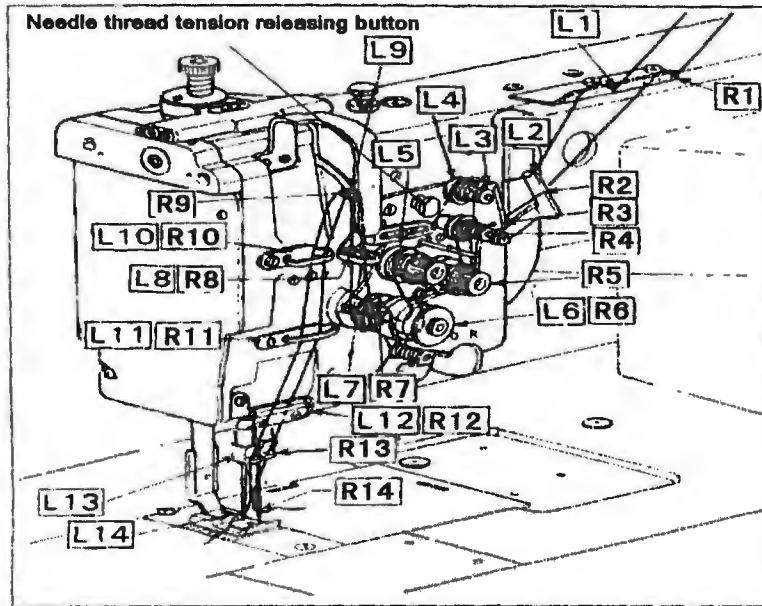
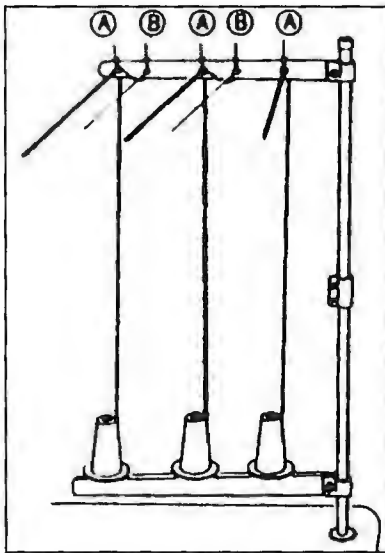
## 4. Threading of needle threads

- Pass each needle thread through thread guide A

**Note:** When thin slippery thread (polyester thread or filament thread, for example) is used pass the thread through thread guide B as well.

- With the take-up lever located at the upper most position, pass each needle thread in the order shown in the following figure.

**Note:** Pressing the upper thread loosening button shown in the figure below opens the saucer of the upper thread tension adjuster, and the upper thread can easily pulled out.

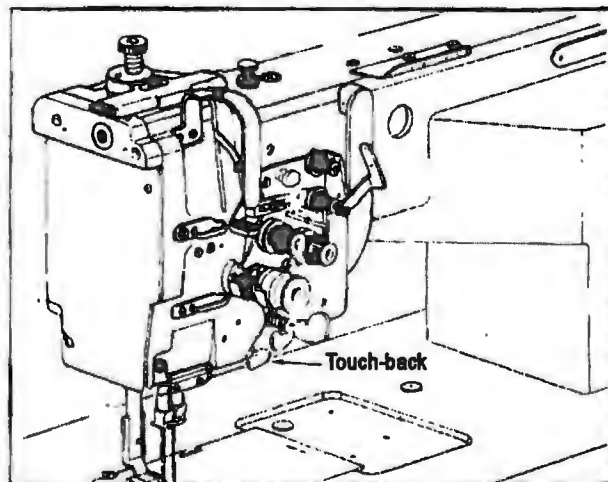
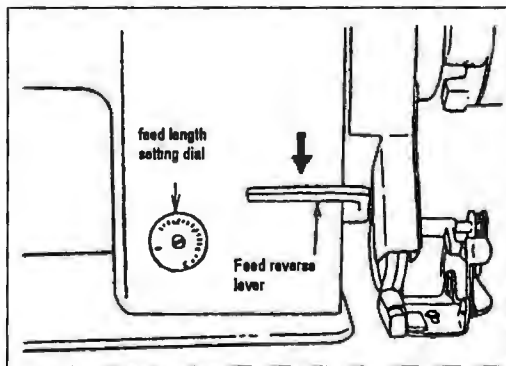


### 5. Adjustment of feed (stitch) length and stitch reversing (touch back)

**Note:** To make feed (stitch) length smaller, depress the feed reverse lever and set the feed length setting dial to a desired position

Touch-back button . . . Direction of stitching can be reversed by depressing this button.

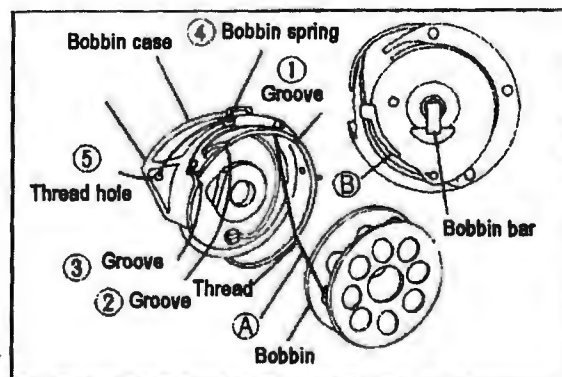
Stitching goes on in reversed direction while the button is held down, and returns to forward direction when the button is released.



### 6. Setting of bobbin

leading the lower thread and install the bobbin

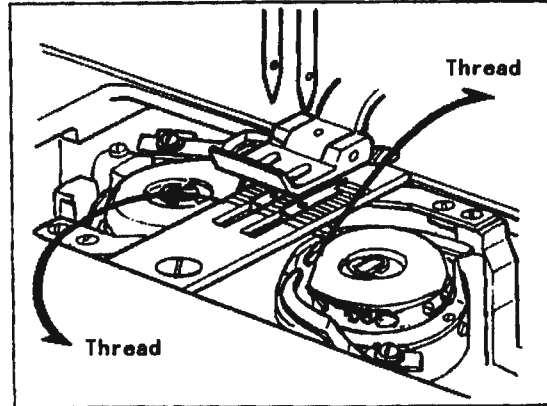
- (1) Pulling out thread from side A, then install the bobbin case.
- (2) Threading following (1)~(5)
- (3) Put the bobbin case to rotating hook, then replace hook shaft.
- (4) Press the bobbin bar.
- (5) Leading the lower thread over bed plate.



## 7. Adjusting of needle thread guide

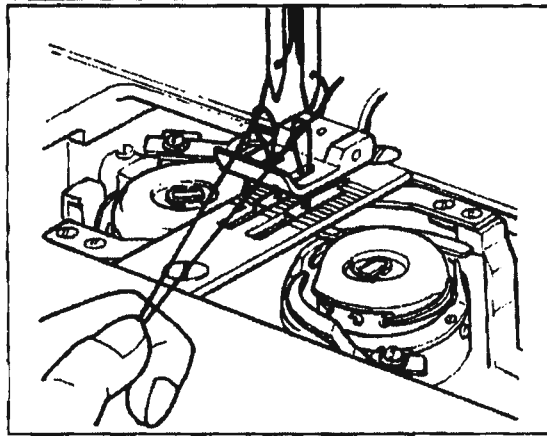
Please adjust needle thread guide of needle thread tension according to sewing condition.

| Thread guide position | Left                      | Middle                     | Right                     |
|-----------------------|---------------------------|----------------------------|---------------------------|
| Materials             | The thicker than standard | L } Standard<br>M }<br>B } | The thinner than standard |
| Needle thread supply  | More                      | Standard                   | Less                      |

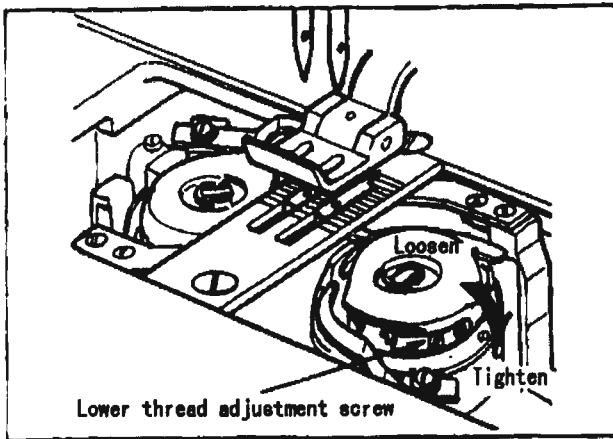


## 8. Threading of bobbin threads

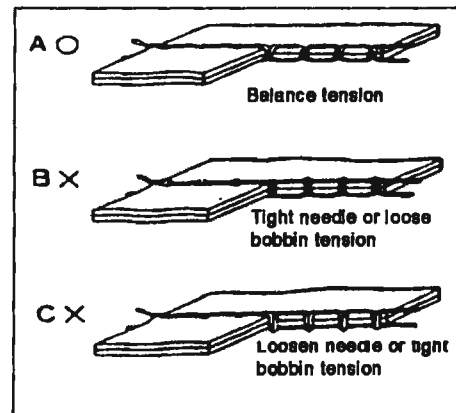
- (1) Put the hook into the bobbin case and press down the latch .  
The thread end should be left on the bed.
- (2) While holding the two needle thread by left hand, rotate the wheel one turn by right hand. By pulling up the needle threads, as shown in the figure, the bobbin threads will be lifted. Both of bobbin thread and needle thread should be aligned and led backward.



## 9. Tension adjustment of bobbin threads

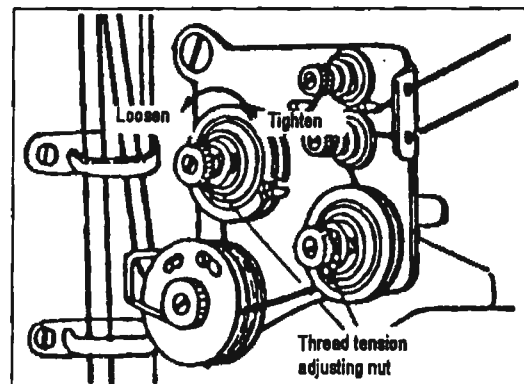


## 10. Balance of thread tension



## 11. Needle thread tension

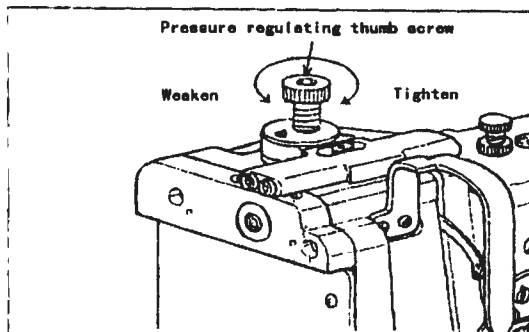
- ◆ Needle thread tension should be adjusted in reference to bobbin thread tension.
- ◆ To adjust needle thread tension, turn each tension adjusting nut.
- ◆ Needle thread tension can be also adjusted for special



fabric and thread by changing intensity and movable range of slack thread adjusting spring.

## 12. Adjustment of presser foot pressure

Pressure to fabric(s) can be adjusted by turning the pressure adjusting screw.



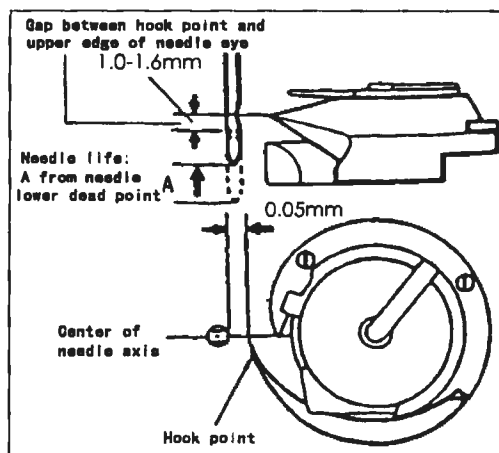
## 13. Timing between rotating hook motion and needle motion

- (1) Set stitch length on the stitch length setting dial shown table.
- (2) When needle is lifted A shown table, from the lowest positional, as shown in Figure, the following positional relationship should be maintained.
  - The upper edge of needle eye should be 1.0-1.6mm below the hook point.
  - The hook point should be located at the center of needle axis.
  - Gap between the hook point and the side face of needle should be 0.05mm.

| Model                 | -M    | -B    |
|-----------------------|-------|-------|
| Set the stitch length | 3     | 4.5   |
| Needle life A         | 2.2mm | 2.4mm |

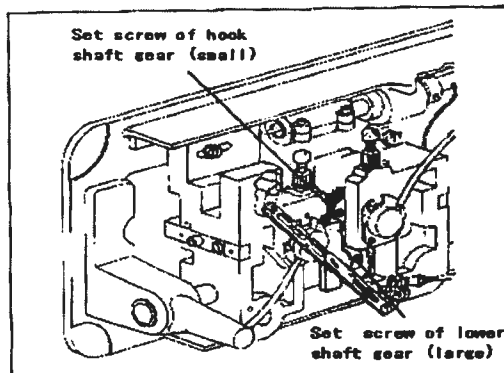
### ◆ Position adjustment of hook point

Adjust the hook point so that it comes to the center of needle axis.



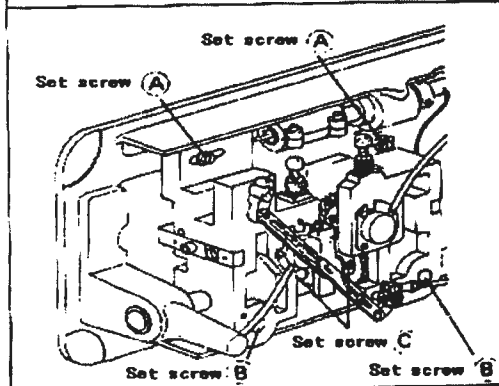
- (1) Lean the machine head backward and loosen three set screws of hook shaft gear (small)
- (2) Turn the balance wheel and stop when the needle is lifted A mm shown table from the lowest position.
- (3) Rotate the hook by hand to position the hook point to the center of needle axis.
- (4) Move the hook bracket leftward or rightward and position it so that gap between the hook point and side face of needle is 0.05mm. For this adjustment, each screws A, B and two of C should be loosened.

**Note:** In the adjustment, do not excessively loosen set screws C and always maintain meshing of hook shaft gear and lower shaft gear.



- (5) Tighten the set screws in the following order:

- a. While pressing the lower shaft gear (large) against the side face of hook bracket, tighten the set screws C first.

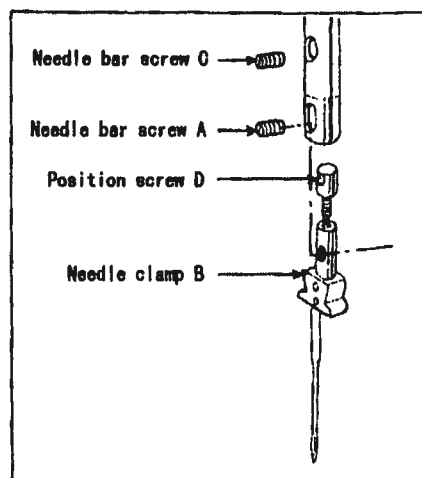


b. After checking gap between the needle and the hook, tighten the set screws **A**.

c. Then tighten the set screws **B**.

• **Position adjustment of needle point**

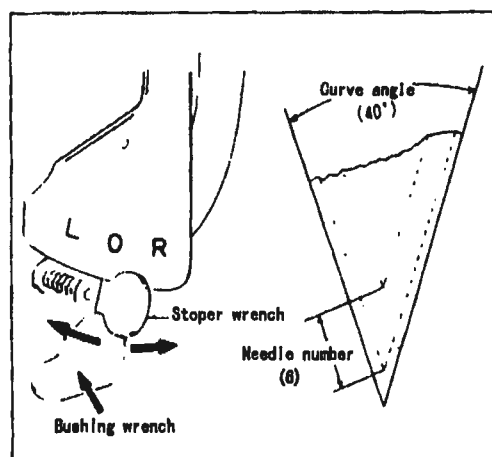
Adjust needle position so that gap between the upper edge of needle eye and the hook point is 1.0-1.6 mm when the needle is lifted by A mm from its lowest position shown in before page.



- (1) Loosen the needle bar screw **A**.
- (2) Rotate the needle clamp **B** one circuit ( amount of Adjustment is 0.6mm ), or loosen the needle bar screw **C**, rotate position screw **D** half a circuit ( amount of adjustment is 0.3mm ).
- (3) Be sure to mark the needle clamp facing left side, Tighten needle bar screw **C** and **A**.

**14. Needle bar stop position (left & right)**

**Note:** The stopper wrench can be operated while the sewing Machine running, but the best way is to adjust while Take-up lever stopping at its highest position.



- (1) Stop the motion of left-side needle bar:  
Make the stopper wrench to the position **L**.
- (2) Stop the motion of right-side needle bar:  
Make the stopper wrench to the position **R**.
- (3) Two needles running at the same time:  
Press down restore plate, stopper wrench restore to **O** position automatically.

The relations between needle stitch and needle number (while the gap between two needles is 1/4)

| needle number<br>curve angle | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 30°                          |     |     |     | 4.8 | 4.0 | 3.7 | 3.0 |
| 40°                          |     |     | 4.4 | 3.5 | 2.9 | 2.5 | 2.2 |
| 50°                          |     | 4.6 | 3.4 | 2.7 | 2.3 | 2.0 | 1.7 |
| 60°                          | 5.5 | 3.7 | 2.8 | 2.2 | 1.9 | 1.6 |     |
| 70°                          | 4.6 | 3.0 | 2.3 | 1.8 | 1.5 |     |     |
| 80°                          | 3.8 | 2.5 | 1.9 | 1.5 | 1.3 |     |     |
| 90°                          | 3.2 | 2.1 | 1.6 | 1.3 |     |     |     |
| 100°                         | 2.7 | 1.8 | 1.3 |     |     |     |     |
| 110°                         | 2.2 | 1.5 |     |     |     |     |     |
| 120°                         | 1.8 | 1.2 |     |     |     |     |     |
| 130°                         | 1.5 |     |     |     |     |     |     |
| 140°                         | 1.1 |     |     |     |     |     |     |

**15. Relations between curve angle and stitch length**

- (1) Determine the stitch length according to the form to obtain various.
- (2) The needle number of another outside needle can be obtained while the angle be determined.
- (3) Example: While the angle is 40°, if the stitch is 2.9mm, then the outside needle number is 6.

## 16. Adjustment of feed dog height

Height of feed dog and pressure of presser foot should be adjusted for individual fabric(s) with the following cautions:

- Fabric will be damaged if the feed dog extends too high, or pressure of presser foot is too large.
- Even stitch length cannot be assured if the feed dog is too low or pressure of presser foot is too small.
- Feed dog height should be measured at the point where the needle is at the top position.

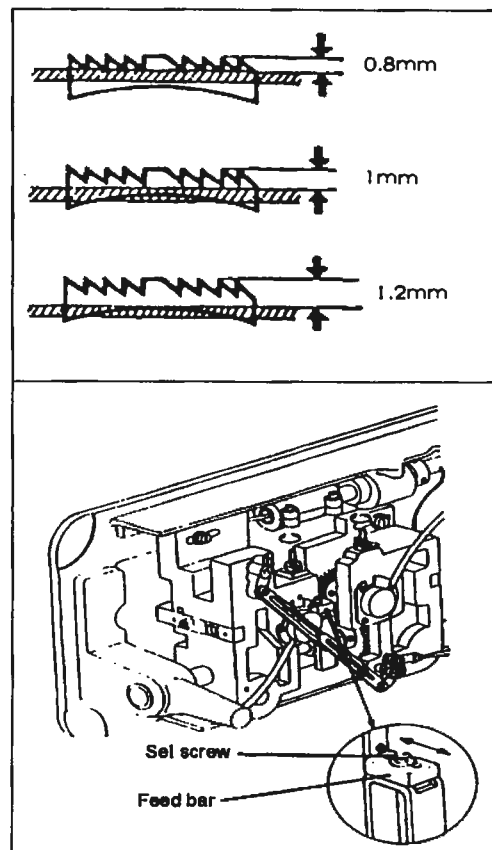
For light fabrics..... Approx. 0.8mm from throat plate

For usual fabrics.....Approx. 1.0mm from throat plate

For heavy fabrics.....Approx. 1.2mm from throat plate

### Adjustment procedure

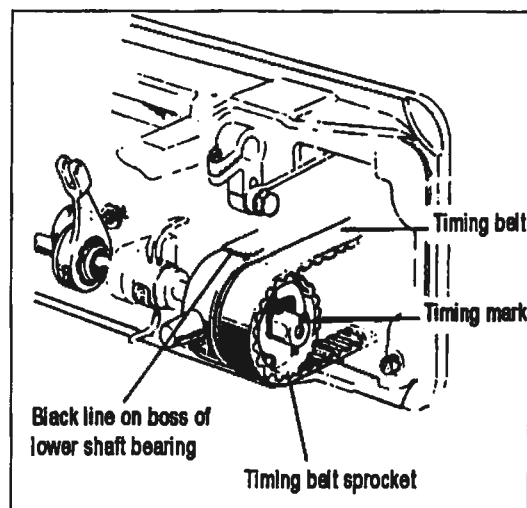
- Lean the machine head backward.
  - Turn the hand wheel by hand and stop when the Feed dog rises to the maximum height.
  - Loosen the feed bar set screw.
  - Vertically move the feed bar (in the direction indicated by arrow in the figure) to adjust it to adequate height.
  - After the adjustment, tighten the feed bar set screw.
- ♦ The feed dog height is factory-adjusted to 1.0mm



## 17. Relationship between rotating hook motion and take-up lever motion

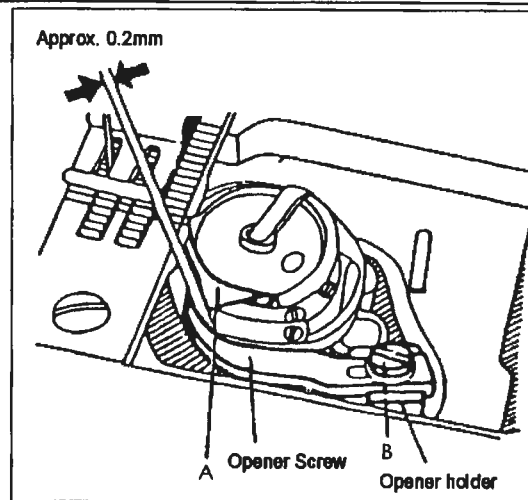
When the timing belt (toothed belt) was removed for its replacement, for example, the relationship between rotating hook motion and take-up lever motion should be adjusted as follows:

- Turn the balance wheel and stop when the take-up lever is lifted to its top position.
- Lean the machine head backward and make sure the arrow (timing mark) put on the timing belt is in line with the black line on the boss of hook shaft bearing.
- If the timing mark is not in line with the black line, remove the timing belt and install it again to adjust.



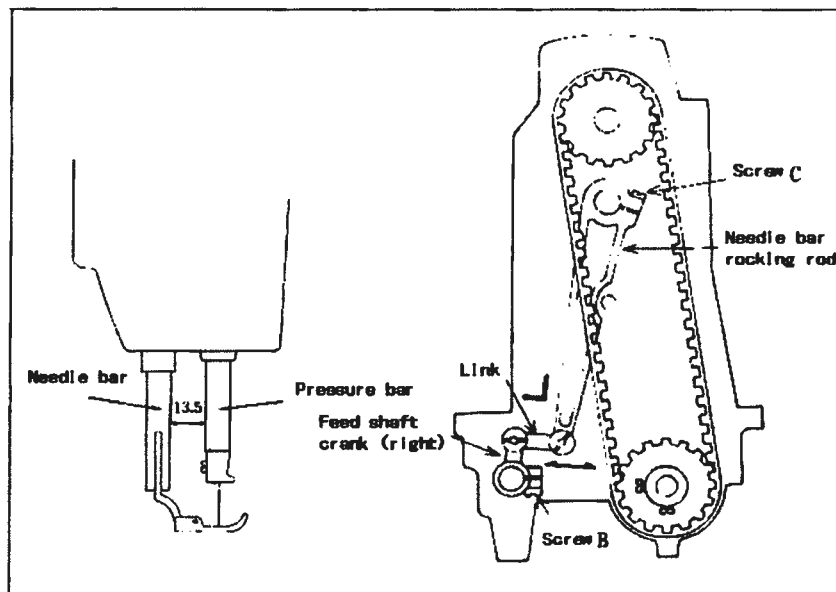
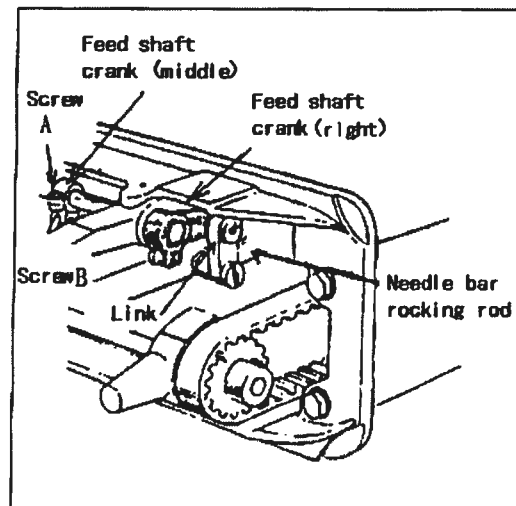
### 18. Relationship between hook motion and opener motion

- a) Turn the balance wheel by hand and stop when the opener holder is located most remotely from the throat plate.
- b) Make sure gap between the bobbin case holder A and the opener is approximately 0.2mm.
- c) If the gap is too large or small, loosen the opener set screw B and adjust position of the opener.



### 19. Relationship between needle motion and feed dog motion

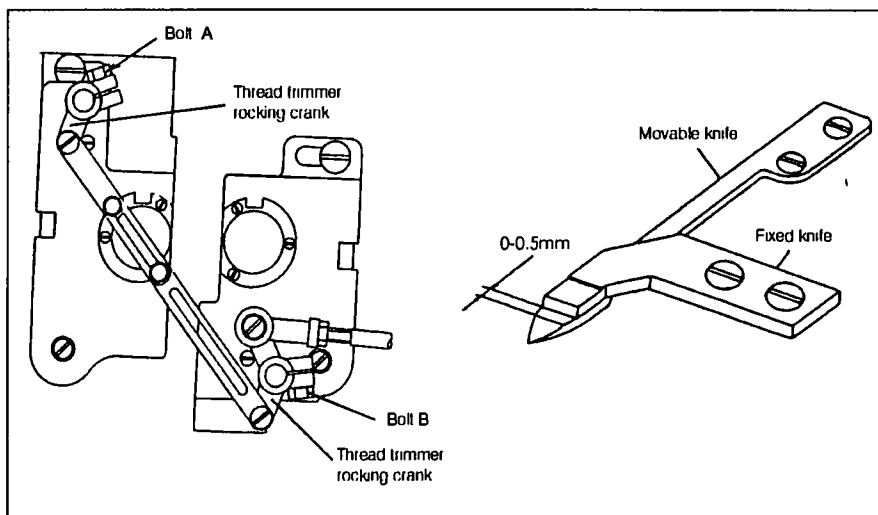
- The feed dog should be adjusted so that the needle can plunge into the feed dog needle hole at the center of the hole.
- (1) Set stitch length to "0" on the stitch length setting dial
  - (2) Lean the machine head backward.
  - (3) Loosen the feed shaft crank set Screws A and B
  - (4) Set the needle at the lowest position.
  - (5) Adjust the distance between the pressure bar and the needle bar to be 13.5, and tentatively tighten the screws A and B of the feed shaft crank.
  - (6) Check that the right feed shaft crank is connected with the link at right angle, as shown in Figure.
  - (7) If the connection is not at right angle, remove the back cover, loosen screw C and move the needle bar rocking rod in the arrow direction to adjust.
  - (8) After the completion of adjustment, fully tighten the screws A, B and C.



## 20. Installation of movable knife

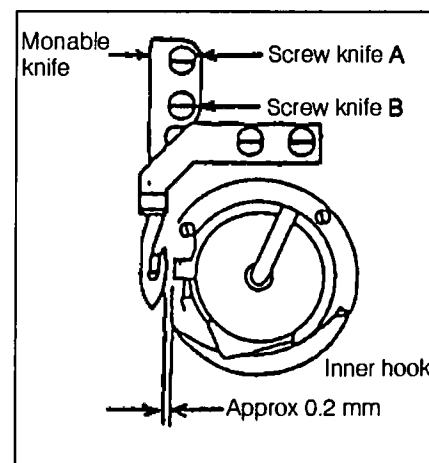
### (1) Initial position of movable knife

- a. Turn the balance wheel and lower the needle bar to the lowest position.
- b. Push the cam follower crank so that the cam roller enters into the thread trimmer cam groove.
- c. Turn the balance wheel until the black mark point on the arm meets the white mark point on the balance wheel.
- d. Set the cam follower crank at this position with a screwdriver temporarily preventing the cam roller coming out from the cam groove.
- e. Loosen the thread trimmer rocking crank clamp bolts **A** and **B**.
- f. Adjust the movable knife so that the movable knife end slant portion protrudes 0-0.5 mm from the fixed knife, as shown in Figure and tighten the bolts **A** and **B**.



### (2) Gap between movable knife and bobbin case holder stopper

- a. Turn the balance wheel by hand until needle reaches the lowest position.
- b. With the needle at the lowest position, depress cam follower crank, turn the balance wheel until the movable knife reaches the extremity of its stroke.
- c. Manually rotate the inner hook in the direction indicated by arrow in Figure and adjust gap between the movable knife and the inner hook stopper to about 0.2 mm (the screws A and B should be loosened for this adjustment).

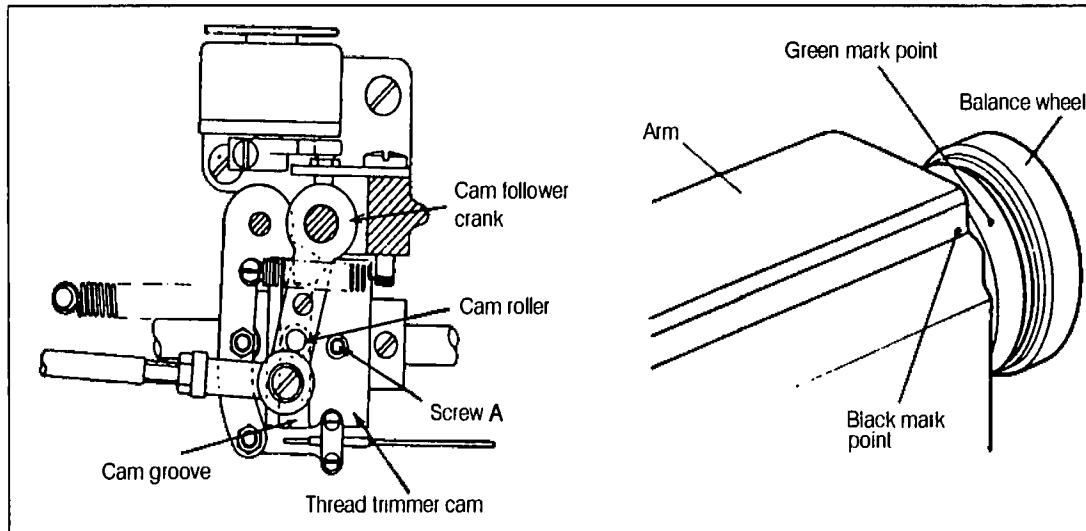


## 21. Adjustment of thread trimmer cam

- a. Turn the balance wheel by hand until the needles reach the lowest position.
- b. Maintaining the needle position, depress the cam follower crank and put the cam roller into the groove of thread trimmer cam.

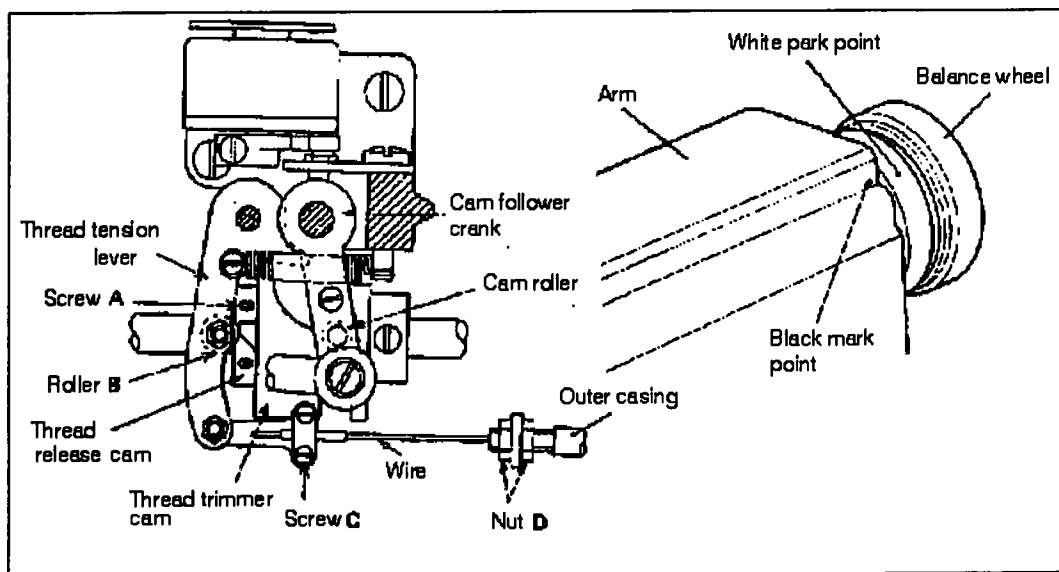


- c. Turning the balance wheel by hand, adjust the thread trimmer cam so that the movable knife starts moving when the green mark point on the balance wheel comes in line with the black mark point on the arm.
- ※ To adjust, loosen two thread trimmer cam clamp screws A.



## 22. Adjustment of needle threads tension release assembly

- a. Turn the balance wheel by hand until the needles reach the lowest position.
- b. Maintaining the needle position, depress the cam follower crank and put the cam roller into the groove of thread trimmer cam.
- c. Turning the balance wheel by hand, adjust the thread tension release cam so that the tension disc close when the white mark point on the balance wheel comes in line with the black mark point on the arm.  
To adjust, loosen two tension release cam clamp screws A.
- d. Opening degree of tension disc should be adjusted with the tension release roller B mounted on the convex portion of thread release cam, as shown in Fig.  
To adjust, loosen the screws C and draw the wire.
- e. Make fine adjustment by loosening the nut D.

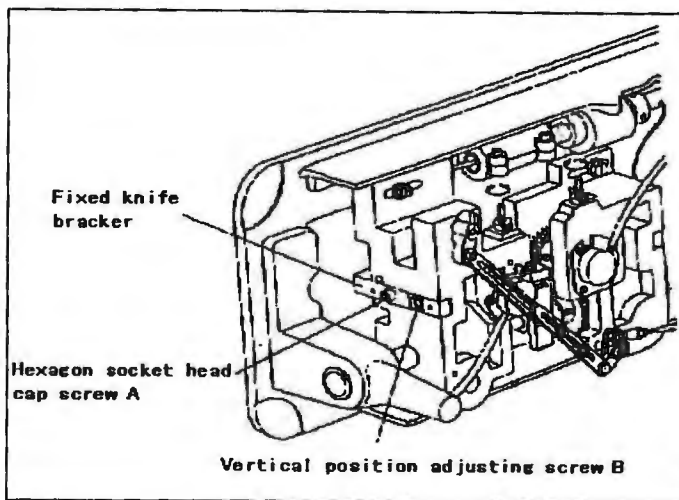


### 23. Adjustment of meshing pressure of movable knife and fixed knife

- a. Loosen the fixed knife bracket clamp bolt A.
- b. Turn the vertical position adjusting screw B to adjust meshing pressure and then tighten the hexagon socket head cap screw A.

**Note:** Since excess pressure causes large torque to the thread trimming mechanism and trimming failure, adjust it so that thread can be trimmed with minimum pressure.

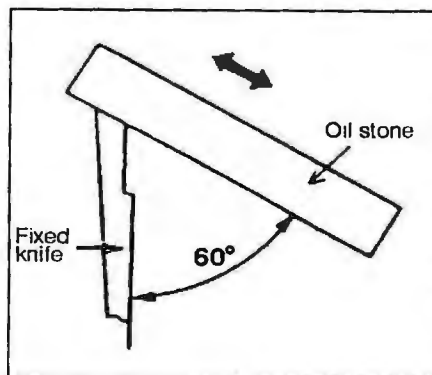
- c. Move the movable knife and check that the thread can be sharply trimmed.



### 24. Sharpening of fixed knife

When the knives dull, the fixed should be sharpened as illustrated in Fig.

Since it is very difficult to sharpen the movable knife, replace it with a new one when it dulls.



### 25. Adjustment for change of needle gage

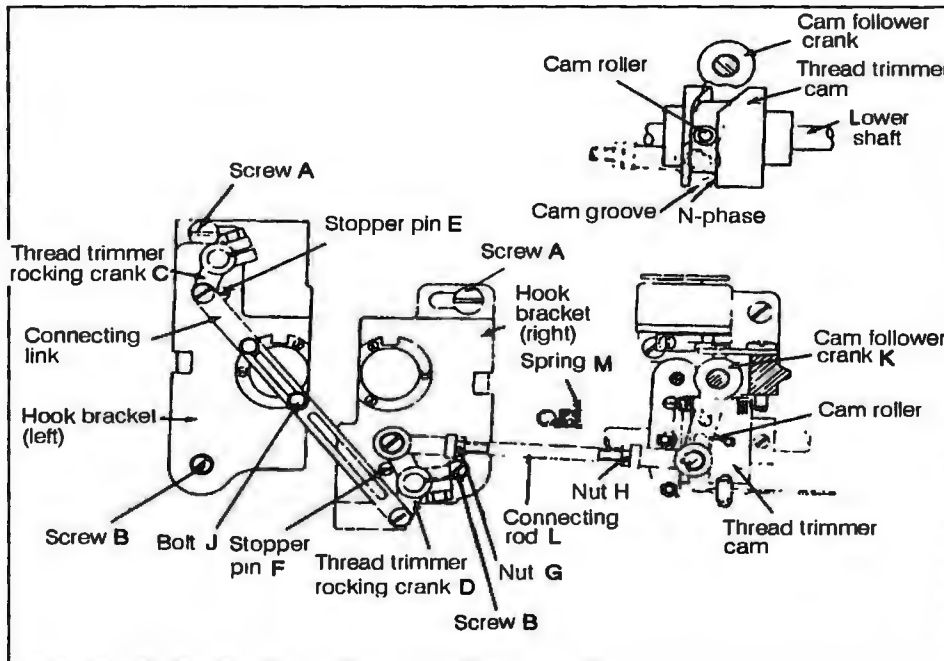
- (1) Replace the throat plate, feed dog and needle clamp.

(Since the throat plate and feed dog are special parts designed for thread trimming machine, be sure to use those specified by us.)

- (2) Lean the machine head backward.
- (3) Loosen two connecting link clamp bolts J.
- (4) Remove the spring M.
- (5) Loosen the hook bracket clamp screws A and B and adjust gap between each needle and hook.
- (6) When the needles and hooks have been adjusted, install the spring M.
- (7) Contact the rocking cranks C and D to the stopper pins E and F and tighten the connecting link clamp bolt J.
- (8) Turn the balance wheel by hand until the needles reach the lowest position.
- (9) Loosen the nuts G and H.
- (10) Depress the cam follower crank K and adjust the connecting rod L so that the cam roller can smoothly enter the groove of thread trimmer cam. Then tighten the nuts G and H.
- (11) Adjustment of the cam groove and the cam roller
  - i. Push the cam follower crank K so that the cam roller enters into the cam groove.
  - ii. Turn the connecting rod L and adjust the clearance between the cam roller and the cam

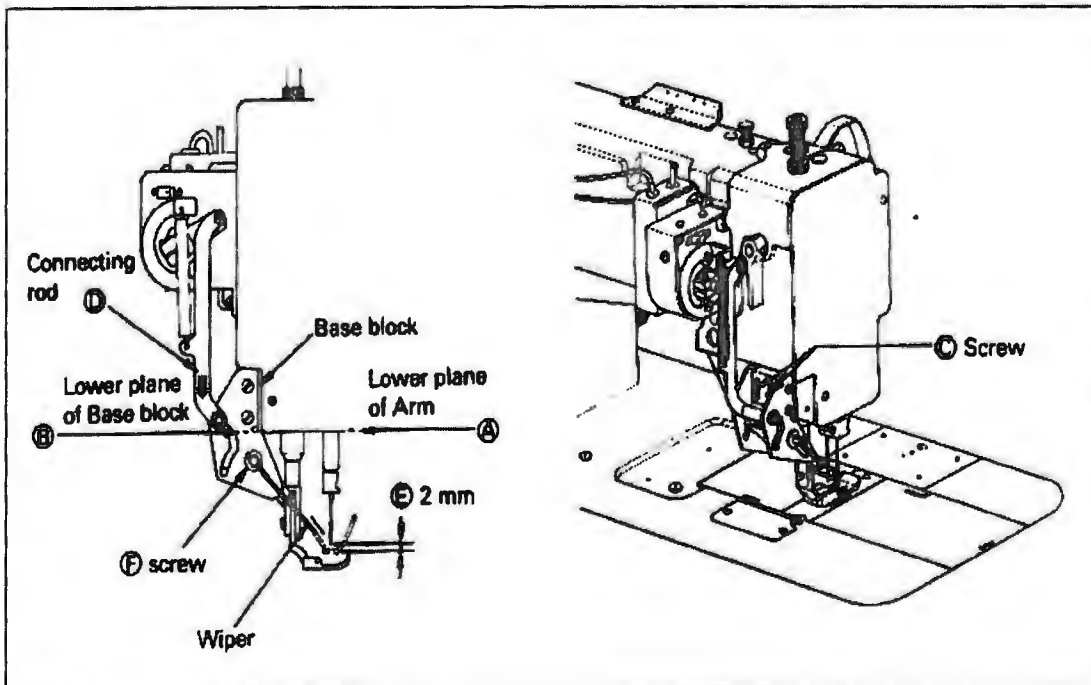
groove surface N as small as possible, and tighten the nuts G and H.

- iii. Push the cam follower crank K again and check that the cam roller enters into the thread trimmer cam groove smoothly.



## 26. Wiper adjustment

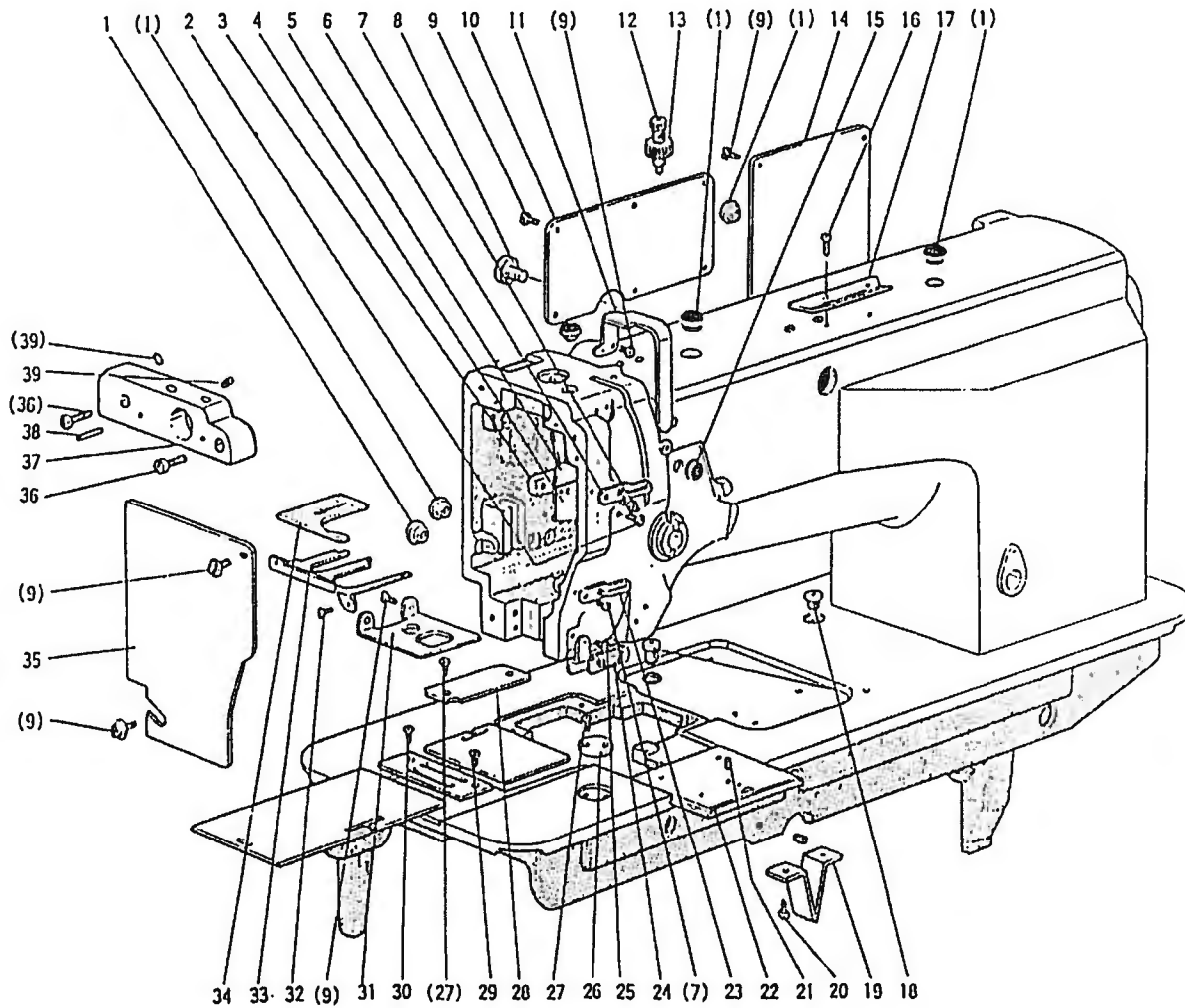
- a) Run the machine then stop at "up" position.
- b) Loosen the screw C, then adjust the base block so that the line A and the line B are the same plane, then tighten the screw C.
- c) Loosen the screw F, then adjust the wiper move so as the E clearance is 2mm, then Tighten the screw F.



## SPECIFICATIONS

| Model                   |          | GC20528-M   | GC20528-M-D                             | GC20528-B                               | GC20528-B-D                      |
|-------------------------|----------|---|---|---|----------------------------------|
| Application             |          | Light to medium heavy material                    |   | Medium heavy material                   |                                  |
| Max. sewing speed       |          | 3500rpm   |   | 3000rpm                                 |                                  |
| Stitch length           |          | 0~5mm   |   | 0~7mm                                   |                                  |
| Needle-bar stroke       |          | 32mm  |   |   |                                  |
| Presser-foot stroke     |          | 13mm by Leg                                       |   | 7mm by hand                             |                                  |
| Needle No.              |          | DP×5 11#-14#                                      |   | DP×5 18#-22#                            |                                  |
| Rotating hook           |          | Standard vertical-axis hook with self-lubrication | Auto lubrication hook (Thread trimming) | Large hook with bobbin thread pull-back | (Horizontal full-rotating) Large |
| Auto trimmer            |          | —   | √                                       | —                                       | √                                |
| Thread take-up lever    |          | Slide lever                                       |   |   |                                  |
| Stitch adjusting system |          | Dial  |   |   |                                  |
| Lubrication system      |          | Automatic lubrication                             |   |   |                                  |
| Motor                   |          | Clutch motor<br>370W                              | Servo motor<br>550W                     | Clutch motor<br>370W                    | Servo motor<br>550W              |
| Needle gauge            | Standard | 6.4mm   |   |   |                                  |
|                         | Special  | 3.2   | 4.8                                     | 8                                       | 9.5 12.7mm                       |

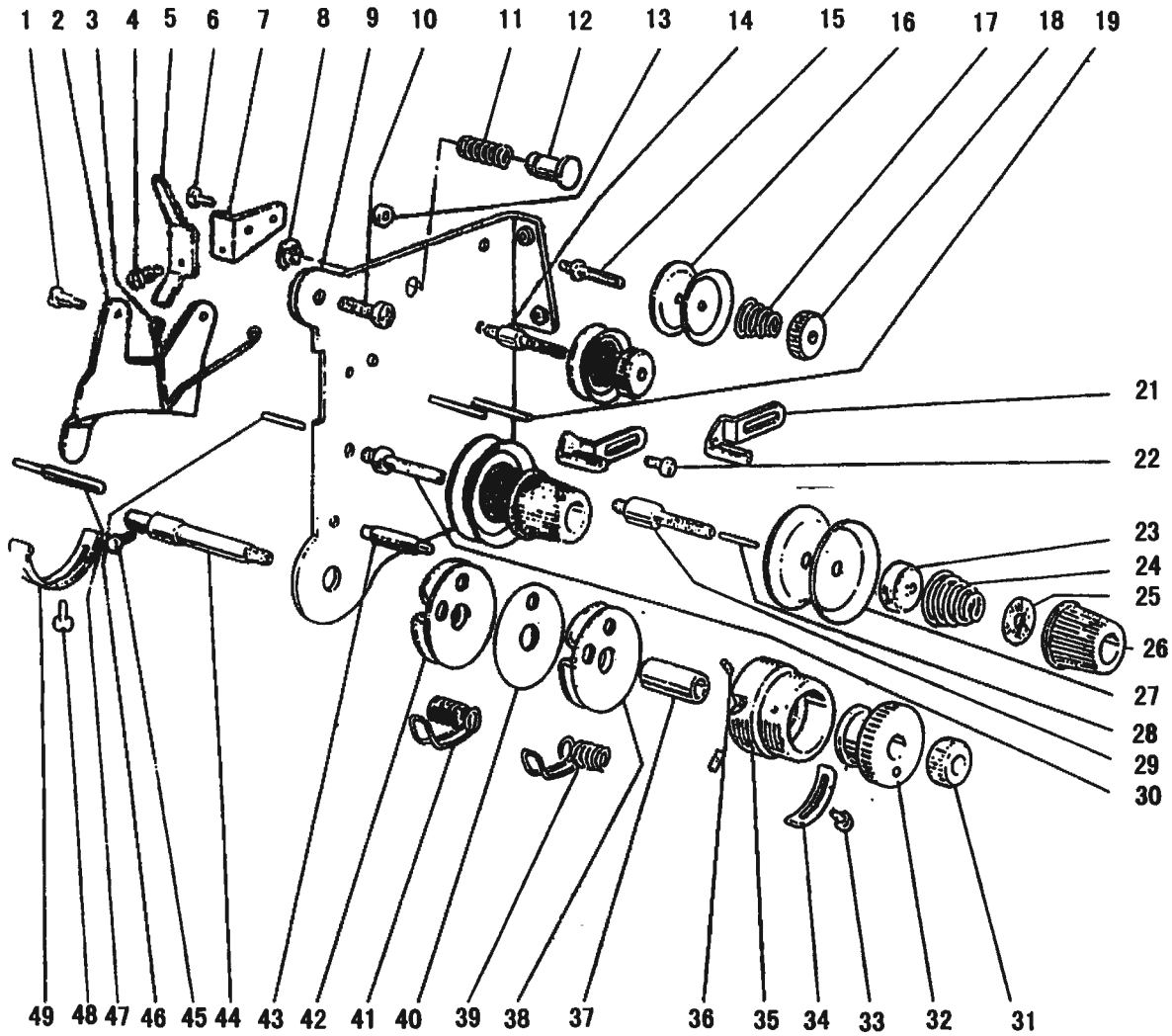
# A. ARM BED AND ITS ACCESSORIES



## A.ARM BED AND ITS ACCESSORIES

| Fig. No. | Part No.    | Description             | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|-------------|-------------------------|-----------|-----------|-------------|-------------|------------------|
| A01      | H3200B2190  | Rubber plug             | 5         | 5         |             |             | black            |
| A01      | 114715B8001 | Rubber plug             |           |           | 5           | 5           | gray             |
| A02      | 112400B2080 | Screw                   | 2         | 2         | 2           | 2           | SM3/16 (28) ×11  |
| A03      | H2400B2060  | Spacer                  | 1         | 1         | 1           | 1           |                  |
| A04      | 113200B2060 | Oil guard plate         | 1         | 1         | 1           | 1           |                  |
| A05      | H2400B2050  | Oil guard plate         | 1         | 1         | 1           | 1           |                  |
| A06      | 113200B2070 | Thread guide            | 1         | 1         | 1           | 1           |                  |
| A07      | H3000D2160  | Screw                   | 2         | 2         | 2           | 2           | SM9/64 (40) ×6.5 |
| A08      | 11409060080 | Screw                   | 1         | 1         | 1           | 1           | GB/T818 M6×8     |
| A09      | HA300C2030  | Screw                   | 15        | 15        | 11          | 11          | SM11/64 (40) ×8  |
| A10      | H3200B2030  | Side cover (left)       | 1         | 1         | 1           | 1           |                  |
| A11      | H3200B2050  | Thread take-up cover    | 1         | 1         |             |             | black            |
| A11      | H4717B8001  | Thread take-up cover    |           |           | 1           | 1           | gray             |
| A12      | H3200K0210  | Thumb screw             | 1         | 1         | 1           | 1           | M10×33           |
| A13      | H3200K0220  | Special nut             | 1         | 1         | 1           | 1           | M10×8.5          |
| A14      | H3200B2040  | Side cover (right)      | 1         | 1         | 1           | 1           |                  |
| A15      | H2000B2010  | Rubber plug             | 1         | 1         | 1           | 1           |                  |
| A16      | HA700B2060  | Screw                   | 2         | 2         | 2           | 2           | SM11/64 (40) ×8  |
| A17      | H2400B2100  | Thread guide            | 1         | 1         | 1           | 1           |                  |
| A18      | H2000M0080  | Cap                     | 2         | 2         | 2           | 2           |                  |
| A19      | 114913B8001 | Supporter               |           |           | 1           | 1           |                  |
| A20      | 114912B8001 | Screw                   |           |           | 2           | 2           | SM1/4 (24) ×9    |
| A21      | H3200B2170  | Screw                   | 1         | 1         | 1           | 1           | SM13/64(32)×4    |
| A22      | H3200B2160  | Slide plate             | 1         | 1         | 1           | 1           |                  |
| A23      | H3200B2080  | Thread guide (middle)   | 1         | 1         | 1           | 1           |                  |
| A24      | 113212B0066 | Thread guide (complete) | 1         | 1         | 1           | 1           |                  |
| A25      | 113200B2100 | Screw                   |           |           | 1           | 1           | SM9/64(40)×6.5   |
| A26      | 114915B8001 | Cover                   |           |           | 1           | 1           |                  |
| A27      | 114914B8001 | Screw                   |           |           | 4           | 4           | SM9/64(40)×6     |
| A28      | H4911B8001  | Cover                   |           |           | 1           | 1           |                  |
| A29      | HA300B2190  | Screw                   | 1         | 1         | 1           | 1           | SM11/64 (40) ×8  |
| A30      | H3200B2120  | Screw                   | 1         | 1         | 1           | 1           | SM9/64 (36) ×6.5 |
| A31      | H3400K0020  | Cover                   | 1         | 1         | 1           | 1           |                  |
| A32      | H2004J0067  | Screw                   | 2         | 2         | 2           | 2           | SM9/64 (40) ×7   |
| A33      | H3406K0651  | Oil guard plate         | 1         | 1         | 1           | 1           |                  |
| A34      | H3406K0652  | Felt                    | 1         | 1         | 1           | 1           |                  |
| A35      | 113400L0030 | Face plate              | 1         | 1         |             |             | black            |
| A35      | H3406L0065  | Face plate              |           |           | 1           | 1           | gray             |
| A36      | HA7311C606  | Screw                   | 2         | 2         | 2           | 2           | SM11/64 (40) ×12 |
| A37      | H3400L0070  | Shaft supporter         | 1         | 1         |             |             |                  |
| A37      | H3410L0065  | Shaft supporter         |           |           | 1           | 1           |                  |
| A38      | H602030200  | Pin                     | 2         | 2         | 2           | 2           | GB/T117 3×20     |
| A39      | H2000I2080  | Screw                   | 1         | 1         | 1           | 1           | SM11/64 (40) ×8  |

# B. THREAD TENSION REGULATOR MECHANISM



## B.THREAD TENSION REGULATOR MECHANISM

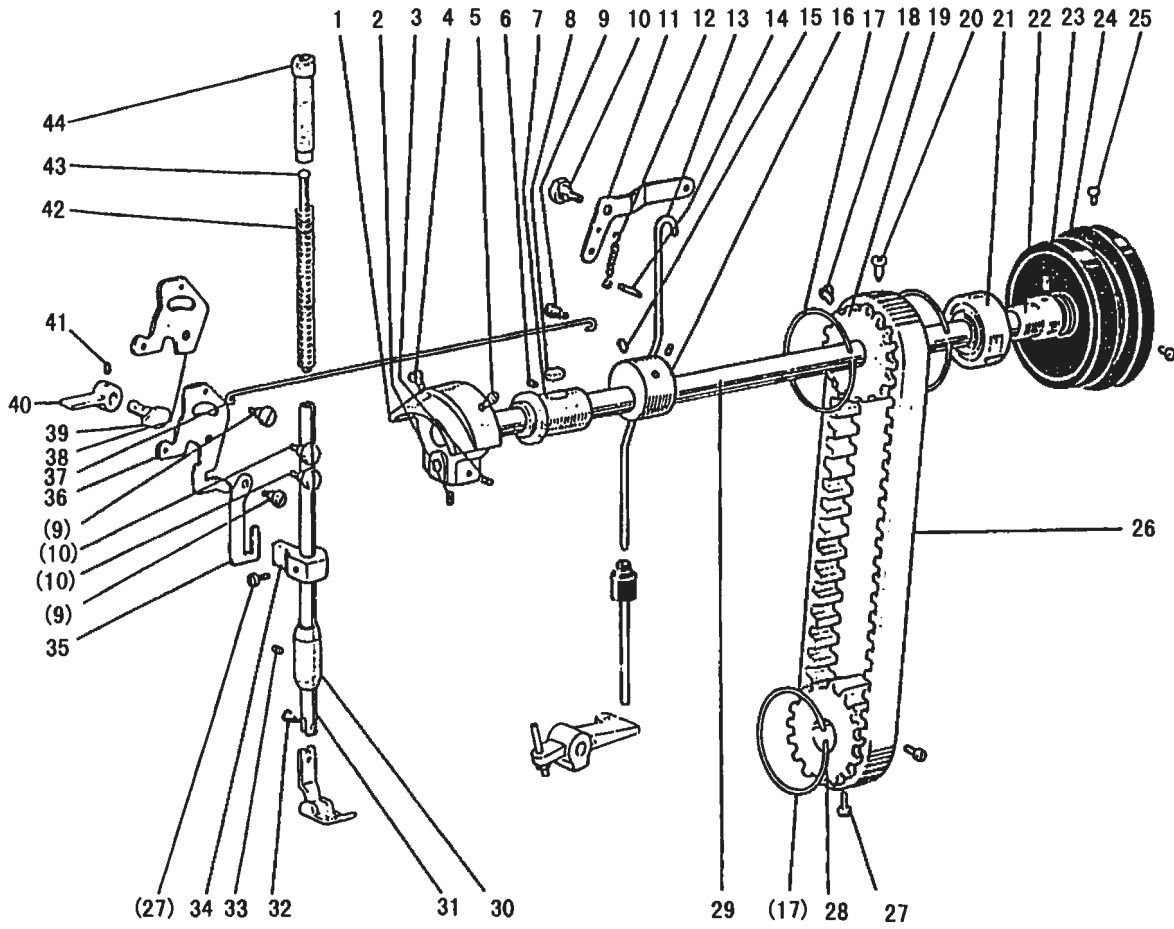
| Fig. No. | Part No.   | Description                    | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|------------|--------------------------------|-----------|-----------|-------------|-------------|------------------|
| B01      | H3221B6811 | Screw                          | 2         | 2         | 2           | 2           | SM9/64 (40) ×3   |
| B02      | H3221B3142 | Tension releasing plate        | 1         | 1         | 1           | 1           |                  |
| B03      | H3221B6812 | Tension releasing spring       | 1         | 1         | 1           | 1           |                  |
| B04      | H4705C8001 | Screw                          |           |           | 1           | 1           | SM9/64 (40) ×4.2 |
| B05      | H4706C8001 | Lever                          |           |           | 1           | 1           |                  |
| B06      | HA7311C306 | Screw                          |           |           | 1           | 1           | SM9/64 (40) ×4.5 |
| B07      | H4707C8001 | Mounting plate                 |           |           | 1           | 1           |                  |
| B08      | H007013050 | Stop ring                      |           |           | 1           | 1           | GB/T896 5        |
| B09      | H3221B6820 | Mounting plate                 | 1         | 1         | 1           | 1           |                  |
| B10      | HA300C2030 | Screw                          | 2         | 2         | 2           | 2           |                  |
| B11      | H4708C8001 | Spring                         |           |           | 1           | 1           |                  |
| B12      | H4709C8001 | Push button                    |           |           | 1           | 1           |                  |
| B13      | H3221B6810 | Nut                            | 2         | 2         | 2           | 2           | SM11/64 (40)     |
| B14      | H3221B0685 | Thread tension stud            | 1         | 1         | 1           | 1           |                  |
| B15      | H3221B0683 | Thread tension stud            | 1         | 1         | 1           | 1           |                  |
| B16      | HA112B0693 | Thread tension disk            | 4         | 4         | 4           | 4           |                  |
| B17      | H3221B0684 | Thread tension spring          | 2         | 2         | 2           | 2           |                  |
| B18      | HA710B0671 | Thumb nut                      | 2         | 2         | 2           | 2           | SM11/64 (40)     |
| B19      | H3221B0682 | Pin                            | 3         | 3         | 3           | 3           |                  |
| B21      | H3221B0687 | Thread guide                   | 1         |           | 1           |             |                  |
| B21      | H3306B0661 | Thread guide                   |           | 1         |             | 1           |                  |
| B22      | HA106B0676 | Screw                          | 1         | 1         | 1           | 1           | SM9/64 (40) ×6   |
| B23      | HA310B0702 | Thread tension releasing plate | 2         | 2         | 2           | 2           |                  |
| B24      | HA115B0703 | Thread tension spring          | 1         |           | 1           |             |                  |
| B24      | H3300B2040 | Thread tension spring          |           | 1         |             | 1           |                  |
| B25      | HA115B7010 | Thumb nut revolution stopper   | 2         | 2         | 2           | 2           |                  |
| B26      | HA310B0701 | Thumb nut complete             | 2         | 2         | 2           | 2           |                  |
| B27      | HA310B0705 | Thread tension disk            | 4         | 4         | 4           | 4           |                  |
| B28      | H3221B6816 | Pin                            | 1         | 1         | 1           | 1           |                  |
| B29      | H3221B0689 | Thread tension stud            | 1         | 1         | 1           | 1           |                  |
| B30      | H3221B0686 | Thread tension stud            | 1         | 1         | 1           | 1           |                  |
| B31      | H32481B721 | Thumb nut                      | 1         | 1         | 1           | 1           | SM1/4 (40)       |
| B32      | H32481B621 | Take-up spring guide           | 1         | 1         | 1           | 1           |                  |
| B33      | H32481BC21 | Screw                          | 1         | 1         | 1           | 1           | SM9/64 (40) ×6   |
| B34      | H32481BB21 | Stopper                        | 1         | 1         | 1           | 1           |                  |
| B35      | H32481B921 | Thread tension post            | 1         | 1         | 1           | 1           |                  |
| B36      | H32481B521 | Screw                          | 2         | 2         | 2           | 2           | SM1/8 (44) ×3.9  |
| B37      | H32481B821 | Bushing                        | 1         | 1         | 1           | 1           |                  |
| B38      | H32481BF21 | Plate complete                 | 1         | 1         | 1           | 1           |                  |
| B39      | H32481B321 | Thread take-up spring          | 1         | 1         | 1           | 1           |                  |
| B40      | H32481BE21 | Plate                          | 1         | 1         | 1           | 1           |                  |
| B41      | H32481B221 | Thread take-up spring          | 1         | 1         | 1           | 1           |                  |
| B42      | H32481BD21 | Plate complete                 | 1         | 1         | 1           | 1           |                  |



## B.THREAD TENSION REGULATOR MECHANISM

| Fig. No. | Part No.   | Description           | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|------------|-----------------------|-----------|-----------|-------------|-------------|------------------|
| B43      | H32481B421 | Screw                 | 1         | 1         | 1           | 1           | SM9/64 (40) ×2.9 |
| B44      | H32481B121 | Thread tension stud   | 1         | 1         | 1           | 1           |                  |
| B45      | H2004J0067 | Screw                 | 1         | 1         | 1           | 1           | SM9/64 (40) ×7   |
| B46      | H3221B6817 | Pin                   | 1         | 1         | 1           | 1           |                  |
| B47      | H3221B6818 | Tension releasing pin | 1         | 1         | 1           | 1           | SM9/64 (40) ×6.5 |
| B48      | H3200B2100 | Screw                 | 1         | 1         | 1           | 1           |                  |
| B49      | H3221B6819 | Stopper               | 1         | 1         | 1           | 1           |                  |

C. ARM SHAFT MECHANISM



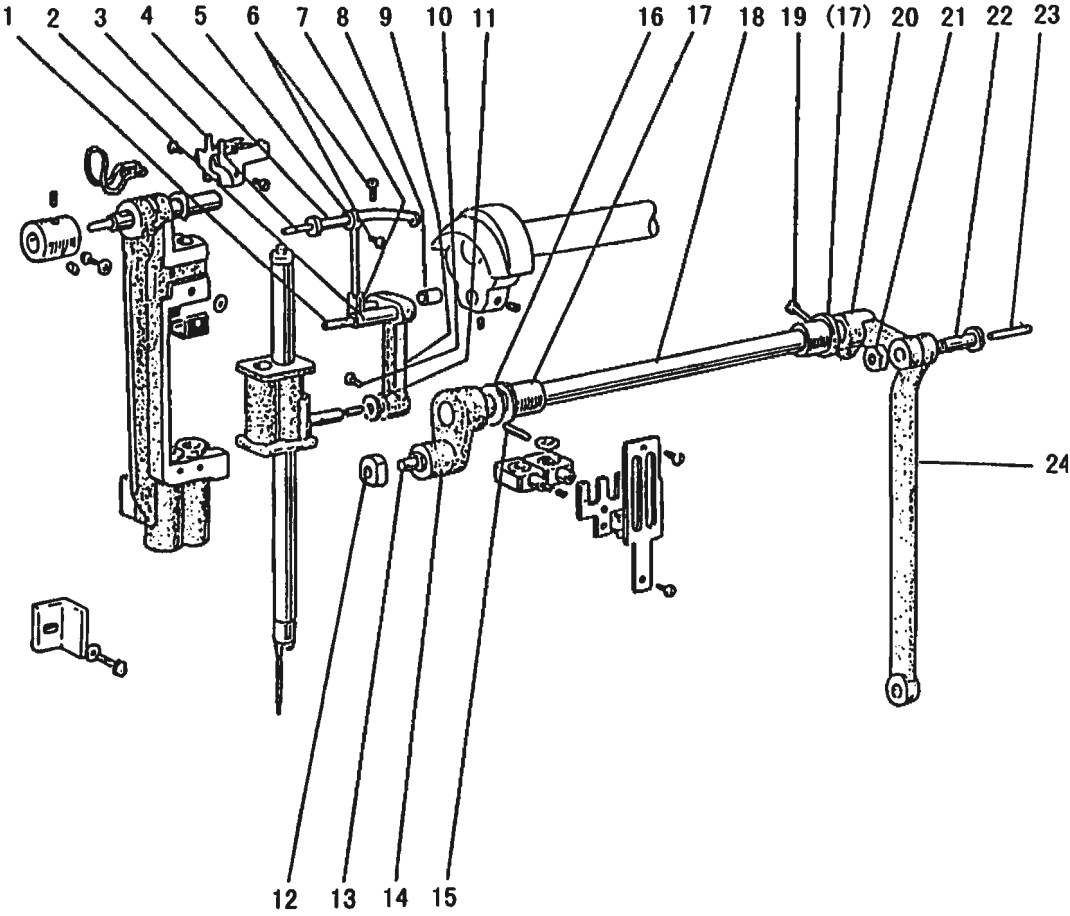
## C.ARM SHAFT MECHANISM

| Fig. No. | Part No.   | Description                | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks            |
|----------|------------|----------------------------|-----------|-----------|-------------|-------------|--------------------|
| C01      | H3404B0011 | Crank                      | 1         | 1         | 1           | 1           |                    |
| C02      | HA105D0662 | Screw                      | 1         | 1         | 1           | 1           | SM1/4 (40) ×3.5    |
| C03      | HA307C0662 | Set screw                  | 1         | 1         | 1           | 1           | SM1/4 (40) ×7      |
| C04      | HA100C2060 | Screw                      | 1         | 1         | 1           | 1           | SM9/32 (28) ×14    |
| C05      | HA100C2070 | Screw                      | 1         | 1         | 1           | 1           | SM9/32 (28) ×13    |
| C06      | H2405D0664 | Set screw                  | 1         | 1         | 1           | 1           | SM15/64 (28) ×14   |
| C07      | H3204B0011 | Arm shaft bushing (left)   | 1         | 1         | 1           | 1           |                    |
| C08      | H32111B104 | Felt                       | 1         | 1         | 1           | 1           |                    |
| C09      | HA107H0662 | Screw                      | 3         | 3         | 3           | 3           | SM3/16 (28) ×3.5   |
| C10      | HA100H2050 | Bolt                       | 3         | 3         | 3           | 3           | SM15/64 (28) ×6.7  |
| C11      | H3211E0691 | Knee lifter lever (right)  | 1         | 1         | 1           | 1           |                    |
| C12      | H3211E0692 | Spring                     | 1         | 1         | 1           | 1           |                    |
| C13      | H3211E0693 | Knee lifter connecting rod | 1         | 1         | 1           | 1           |                    |
| C14      | H3200E2090 | Pin                        | 1         | 1         | 1           | 1           | φ5×28              |
| C15      | HA100C2020 | Screw                      | 2         | 2         | 2           | 2           | SM15/64 (28) ×10   |
| C16      | H3406B0671 | Blance weight              |           |           | 1           | 1           |                    |
| C17      | H3205C0661 | Spring flange              | 3         | 3         | 3           | 3           |                    |
| C18      | HA113F0684 | Screw                      | 1         | 1         | 1           | 1           | SM15/64 (28) ×8.5  |
| C19      | H3205C1021 | Pulley(upper)              | 1         | 1         | 1           | 1           |                    |
| C20      | HA100F2130 | Screw                      | 1         | 1         | 1           | 1           | SM15/64 (28) ×14.5 |
| C21      | H3205J0662 | Ball bearing               | 1         | 1         |             |             | 6204ZZNR/5K        |
| C22      | H3205J0661 | Bushing                    | 1         | 1         |             |             |                    |
| C23      | HA113F0684 | Screw                      | 2         | 2         |             |             | SM15/64 (28) ×8.5  |
| C24      | H3204J0652 | Pulley                     | 1         | 1         |             |             |                    |
| C25      | HA110D0672 | Screw                      | 2         | 2         |             |             | SM15/64 (28) ×12   |
| C26      | H3200C2030 | Cog belt                   | 1         | 1         | 1           | 1           |                    |
| C27      | HA104F0654 | Screw                      | 3         | 3         | 3           | 3           | SM15/64 (28) ×10   |
| C28      | H3207C0671 | Pulley(lower)              | 1         | 1         | 1           | 1           |                    |
| C29      | H3204C0651 | Arm shaft                  | 1         | 1         |             |             |                    |
| C29      | H6906D8001 | Arm shaft                  |           |           | 1           | 1           |                    |
| C30      | HA704B0651 | Bushing                    | 1         | 1         | 1           | 1           |                    |
| C31      | H3200E2010 | Presser bar                | 1         | 1         | 1           | 1           |                    |
| C32      | H3200E2020 | Screw                      | 1         | 1         | 1           | 1           | SM1/8(44)×9        |
| C33      | HA100C2020 | Screw                      | 1         | 1         | 1           | 1           | SM15/64 (28) ×10   |
| C34      | H3207E0661 | Presser bar guide bracket  | 1         | 1         | 1           | 1           |                    |
| C35      | H3210E0683 | Operation plate            | 1         | 1         | 1           | 1           |                    |
| C36      | H3210E0682 | Knee lifter lever left     | 1         | 1         |             |             |                    |
| C37      | H3210E0681 | Knee lifter rod            | 1         | 1         | 1           | 1           |                    |
| C38      | H6904D8001 | Knee lifter lever left     |           |           | 1           | 1           |                    |
| C39      | H3200E2060 | Presser bar lifting cam    | 1         | 1         | 1           | 1           |                    |
| C40      | H3208E0672 | Presser bar lifter         | 1         | 1         | 1           | 1           |                    |
| C41      | HA100B2110 | Screw                      | 2         | 2         | 2           | 2           | SM11/64 (40) ×6.6  |
| C42      | H3200E2100 | Spring                     | 1         | 1         | 1           | 1           |                    |

### C.ARM SHAFT MECHANISM

| Fig. No. | Part No.   | Description          | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks        |
|----------|------------|----------------------|-----------|-----------|-------------|-------------|----------------|
| C43      | HA100H2120 | Presser spring guide | 1         | 1         | 1           | 1           | SM1/2 (28) ×49 |
| C44      | HA309H0681 | Screw                | 1         | 1         | 1           | 1           |                |

D. NEEDLE BAR ROCKING MOTION MECHANISM

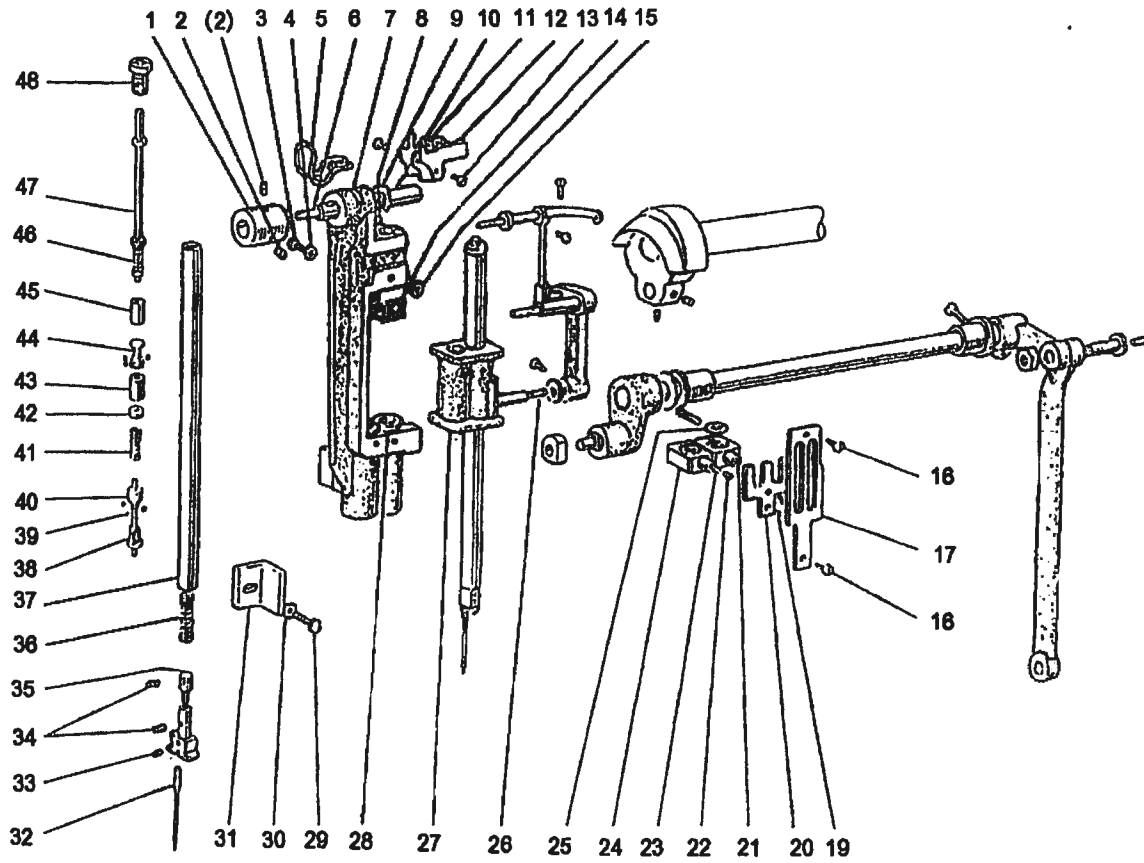


## D.NEEDLE BAR ROCKING MOTION MECHANISM

| Fig. No. | Part No.    | Description                      | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|-------------|----------------------------------|-----------|-----------|-------------|-------------|------------------|
| D01      | 112405D0663 | Oil wick                         | 1         | 1         | 1           | 1           | φ3·80            |
| D02      | 112405D0662 | Needle bar crank pin             | 1         | 1         | 1           | 1           |                  |
| D03      | H2405D1122  | Oil wick                         | 1         | 1         | 1           | 1           | φ2.5·240         |
| D04      | H32422C108  | Thread take-up guide bracket pin | 1         | 1         | 1           | 1           |                  |
| D05      | 1134211B205 | Thread take-up lever             | 1         |           | 1           |             |                  |
| D05      | H3504B0651  | Thread take-up lever             |           | 1         |             | 1           |                  |
| D06      | 11A110D0672 | Screw                            | 3         | 3         | 3           | 3           | SM15.64 (28) ×12 |
| D07      | H2405D1112  | Thread take-up link              | 1         | 1         | 1           | 1           |                  |
| D08      | H24211D305  | Plug                             | 1         | 1         | 1           | 1           |                  |
| D09      | H3409C0671  | Connecting link                  | 1         | 1         | 1           | 1           |                  |
| D10      | HA100H2150  | Screw                            | 1         | 1         | 1           | 1           | SM9/64(40)×11    |
| D11      | H3409C0672  | Bushing                          | 1         | 1         | 1           | 1           |                  |
| D12      | H3410C301P  | Square block                     | 1         | 1         | 1           | 1           |                  |
| D13      | H3406C0671  | Connecting stud                  | 1         | 1         | 1           | 1           |                  |
| D14      | H3406C0672  | Needle bar rocking shaft crank   | 1         | 1         | 1           | 1           |                  |
| D15      | H602040240  | Pin                              | 1         | 1         | 1           | 1           | GB/T117 4×24     |
| D16      | H3400C2050  | Washer                           | 1         | 1         | 1           | 1           |                  |
| D17      | H3204B0652  | Bushing                          | 2         | 2         | 2           | 2           |                  |
| D18      | H3406C0673  | Needle bar rocking shaft         | 1         | 1         | 1           | 1           |                  |
| D19      | H2012N0652  | Screw                            | 1         | 1         | 1           | 1           | SM1.4(24)×16     |
| D20      | H3407C0661  | Connecting crank                 | 1         | 1         | 1           | 1           |                  |
| D21      | H32311D506  | Nut                              | 1         | 1         | 1           | 1           | SM5/16(24)       |
| D22      | H32311D306  | Flanged screw                    | 1         | 1         | 1           | 1           | SM5/16(24)×26.2  |
| D23      | H32311D406  | Oil wick                         | 1         | 1         | 1           | 1           |                  |
| D24      | 113407C0662 | Rocking shaft connecting rod     | 1         | 1         | 1           | 1           |                  |

# E. NEEDLE BAR MECHANISM

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## E.NEEDLE BAR MECHANISM

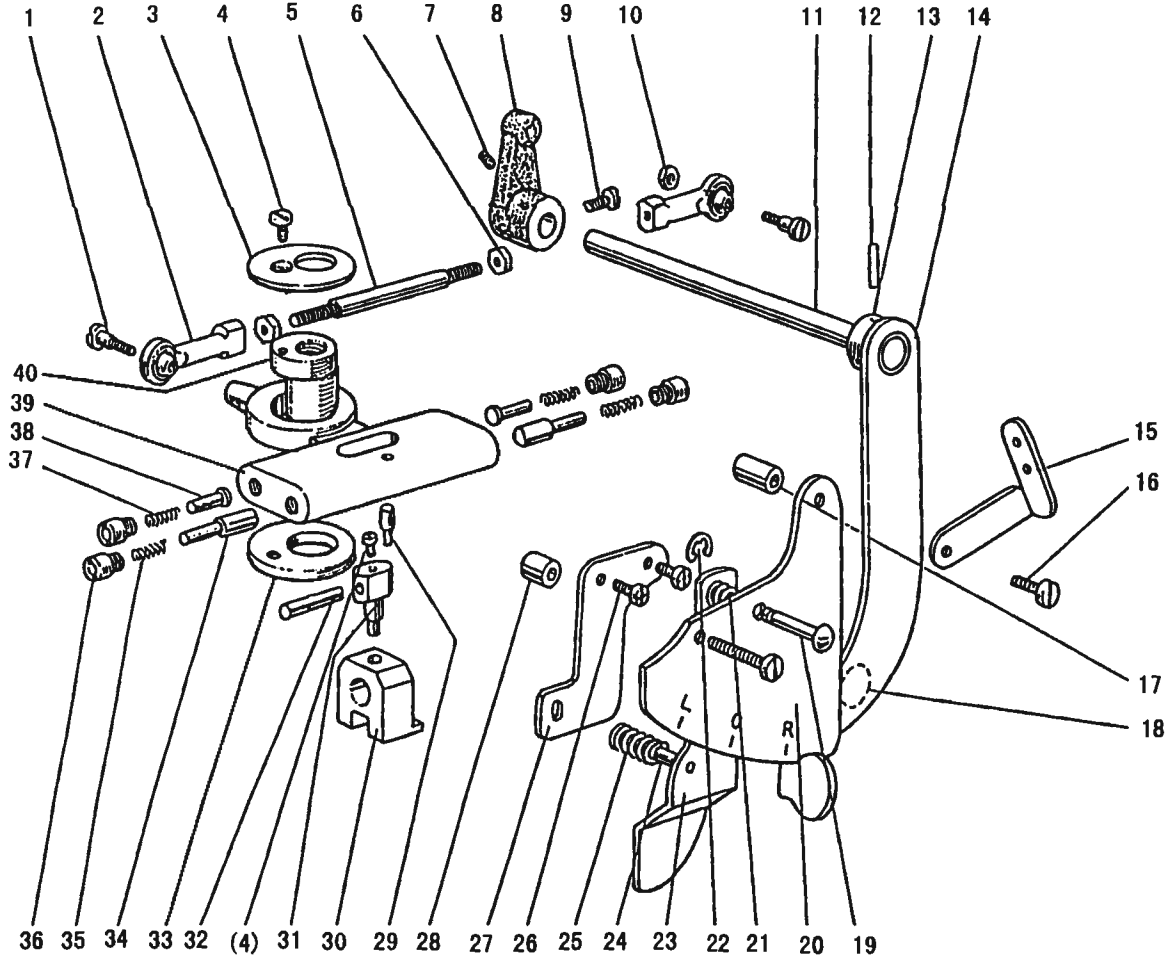
| Fig. No. | Part No.   | Description                      | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks         |
|----------|------------|----------------------------------|-----------|-----------|-------------|-------------|-----------------|
| E01      | H3410C3025 | Bushing                          | 1         | 1         | 1           | 1           |                 |
| E02      | HA305E0662 | Screw                            | 2         | 2         | 2           | 2           | SM15/16(28)×4.5 |
| E03      | H32481BC21 | Screw                            | 1         | 1         | 1           | 1           | SM9/64(40)×6    |
| E04      | H3410C301J | Spring                           | 1         | 1         | 1           | 1           |                 |
| E05      | H3410C301O | Oil wick                         | 1         | 1         | 1           | 1           |                 |
| E06      | H3410C3023 | Oil wick                         | 1         | 1         | 1           | 1           |                 |
| E07      | H34411C110 | Needle bar supporter             | 1         | 1         | 1           | 1           |                 |
| E08      | H609030220 | Pin                              | 1         | 1         | 1           | 1           | GB/T879.1 3×22  |
| E09      | H007013070 | E-type stop ring                 | 1         | 1         | 1           | 1           | GB/T896 7       |
| E10      | H3410C3022 | Needle bar supporter guide pin   | 1         | 1         | 1           | 1           |                 |
| E11      | H3410C301H | Holder                           | 1         | 1         | 1           | 1           |                 |
| E12      | H3410C301Q | Holder                           | 1         | 1         | 1           | 1           |                 |
| E13      | H3410C301L | Screw                            | 2         | 2         | 2           | 2           | SM9/64(40)×4    |
| E14      | H3410C301E | Stopper                          | 1         | 1         | 1           | 1           |                 |
| E15      | HA703R0067 | Washer                           | 1         | 1         | 1           | 1           |                 |
| E16      | H3410C301K | Screw                            | 1         | 1         | 1           | 1           | SM9/64(40)×6.5  |
| E17      | H3410C301D | Guide plate                      | 1         | 1         | 1           | 1           |                 |
| E18      | H3215K0693 | Screw                            | 1         | 1         | 1           | 1           | SM9/64(40)×5    |
| E19      | H3410C301C | Screw                            | 1         | 1         | 1           | 1           | SM3/32(44)×4.2  |
| E20      | H3410C301B | Needle bar supporter             | 1         | 1         | 1           | 1           |                 |
| E21      | H3410C3015 | Needle bar holder (right)        | 1         | 1         | 1           | 1           |                 |
| E22      | H3410C3019 | Set screw                        | 2         | 2         | 2           | 2           | SM9/64(40)×3.5  |
| E23      | H3410C3018 | Needle bar holding stopper       | 2         | 2         | 2           | 2           |                 |
| E24      | H3410C3017 | Needle bar holder (left)         | 1         | 1         | 1           | 1           |                 |
| E25      | H3410C3016 | Spacer                           | 4         | 4         | 4           | 4           |                 |
| E26      | H3204D6513 | Felt                             | 1         | 1         | 1           | 1           |                 |
| E27      | H3410C3014 | Needle bar holder                | 1         | 1         | 1           | 1           |                 |
| E28      | H34411C310 | Bushing for needle bar supporter | 2         | 2         | 2           | 2           |                 |
| E29      | H3400C2020 | Bolt                             | 1         | 1         | 1           | 1           | SM11/64(40)×12  |
| E30      | H3200I2030 | Washer                           | 1         | 1         | 1           | 1           |                 |
| E31      | H3400C2010 | Needle bar guide                 | 1         | 1         | 1           | 1           |                 |
| E32      | H3204D0658 | Needle DP×5#14                   | 2         |           | 2           |             |                 |
| E32      | H3304D0651 | Needle DP×5#18                   |           | 2         |             | 2           |                 |
| E33      | H32481B521 | Screw                            | 1         | 1         | 1           | 1           | SM1/8(44)×3.5   |
| E34      | H34412C710 | Screw                            | 4         | 4         | 4           | 4           | SM1/8(44)×6     |
| E35      | H34412C910 | Stopper for needle clamp         | 2         | 2         | 2           | 2           |                 |
| E36      | H34412C410 | Spring                           | 2         | 2         | 2           | 2           |                 |
| E37      | H34411C210 | Needle bar                       | 2         | 2         | 2           | 2           |                 |
| E38      | H3410C1264 | Triangle pin                     | 2         | 2         | 2           | 2           |                 |
| E39      | H3410C3011 | Steel ball                       | 12        | 12        | 12          | 12          | Sφ2.5           |
| E40      | H3410C1263 | Stud                             | 2         | 2         | 2           | 2           |                 |
| E41      | H3410C1265 | Spring                           | 2         | 2         | 2           | 2           |                 |
| E42      | H3410C1262 | Nut                              | 2         | 2         | 2           | 2           | SM5/64(64)      |



## E.NEEDLE BAR MECHANISM

| Fig. No. | Part No.   | Description | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks                                |
|----------|------------|-------------|-----------|-----------|-------------|-------------|--|
| E43      | H3410C1261 | Nut         | 2         | 2         | 2           | 2           | SM5/64(64)×6<br><br><br><br><br>M5.5×5 |
| E44      | H34412C310 | Pin         | 2         | 2         | 2           | 2           |  |
| E45      | H34412C210 | Sleeve      | 2         | 2         | 2           | 2           |  |
| E46      | H34412C110 | Spring      | 2         | 2         | 2           | 2           |  |
| E47      | H34412C510 | Pin         | 2         | 2         | 2           | 2           |  |
| E48      | H34412C810 | Screw       | 2         | 2         | 2           | 2           |  |

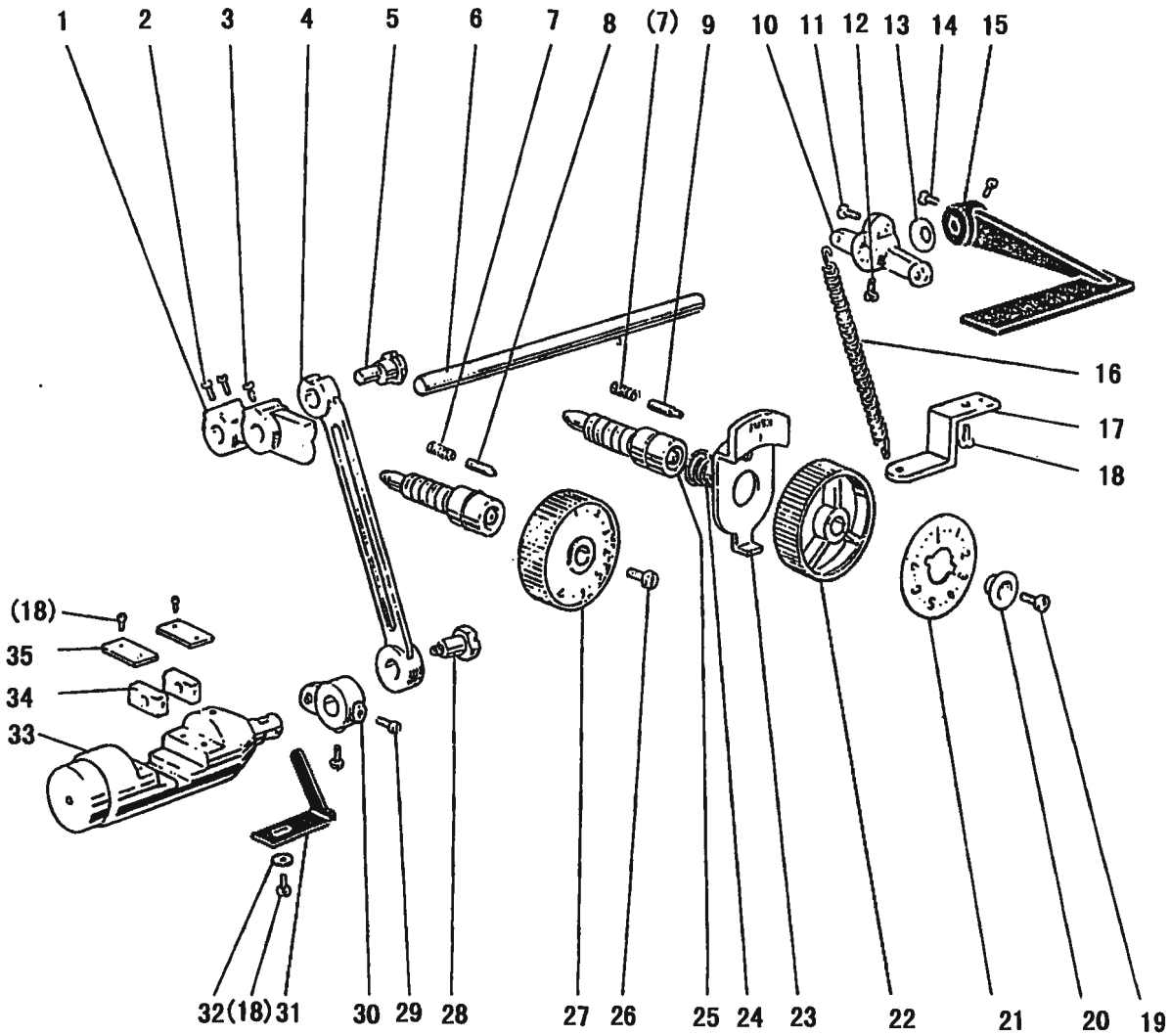
F. NEEDLE BAR CONTROL MECHANISM



## F.NEEDLE BAR CONTROL MECHANISM

| Fig. No. | Part No.   | Description               | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|------------|---------------------------|-----------|-----------|-------------|-------------|------------------|
| F01      | H3400D2030 | Screw                     | 2         | 2         | 2           | 2           | SM11/64(40)×9.5  |
| F02      | H3405D0663 | Ball joint                | 2         | 2         | 2           | 2           | JKM5             |
| F03      | H3400D2120 | Cover                     | 1         | 1         | 1           | 1           |                  |
| F04      | HA7311CC06 | Screw                     | 2         | 2         | 2           | 2           | SM9/64(40)×6.5   |
| F05      | H3405D0661 | Connecting rod            | 1         | 1         | 1           | 1           |                  |
| F06      | H003057050 | Nut                       | 2         | 2         | 2           | 2           | M5               |
| F07      | H3416D0692 | Screw                     | 1         | 1         | 1           | 1           | SM11/64(40)×6.6  |
| F08      | H3416D0691 | Arm                       | 1         | 1         | 1           | 1           |                  |
| F09      | HA100B2110 | Blot                      | 1         | 1         | 1           | 1           | SM15/64(28)×10   |
| F10      | H3221B6810 | Nut                       | 1         | 1         | 1           | 1           | SM11/64(40)      |
| F11      | H34321D407 | Shaft                     | 1         | 1         | 1           | 1           |                  |
| F12      | H609030180 | Spring pin                | 1         | 1         | 1           | 1           | GB/T879.1 3×18   |
| F13      | H34321D207 | Pinching bushing          | 1         | 1         | 1           | 1           |                  |
| F14      | H34321D107 | Stop motion control lever | 1         | 1         | 1           | 1           |                  |
| F15      | H3400L0050 | Thread guide              | 1         | 1         | 1           | 1           |                  |
| F16      | H2004J0067 | Screw                     | 2         | 2         | 2           | 2           | SM11/64(40)×11.4 |
| F17      | H3400D2060 | Pipe                      | 1         | 1         | 1           | 1           |                  |
| F18      | H3407D0671 | Pin                       | 1         | 1         | 1           | 1           |                  |
| F19      | H3408D0681 | Pin                       | 1         | 1         | 1           | 1           |                  |
| F20      | H3408D0686 | Lever position plate      | 1         | 1         | 1           | 1           |                  |
| F21      | H3408D0682 | Spring                    | 1         | 1         | 1           | 1           |                  |
| F22      | H007013040 | E type stopring           | 1         | 1         | 1           | 1           | GB/T896 4        |
| F23      | H3408D0684 | Lever                     | 1         | 1         | 1           | 1           |                  |
| F24      | H3408D0685 | Pin                       | 1         | 1         | 1           | 1           |                  |
| F25      | H3400D2100 | Spring                    | 1         | 1         | 1           | 1           |                  |
| F26      | HA300C2030 | Screw                     | 2         | 2         | 2           | 2           | SM11/64(40)×8    |
| F27      | H3400D2090 | Plate                     | 1         | 1         | 1           | 1           |                  |
| F28      | H3400D2080 | Pipe                      | 1         | 1         | 1           | 1           |                  |
| F29      | H3400D2110 | Screw                     | 1         | 1         | 1           | 1           | SM9/64(40)×12.5  |
| F30      | H3410C3021 | Cam                       | 1         | 1         | 1           | 1           |                  |
| F31      | H3404D0652 | Guide pin                 | 1         | 1         | 1           | 1           |                  |
| F32      | H3404D0653 | Pin                       | 1         | 1         | 1           | 1           |                  |
| F33      | H3404L0653 | Washer                    | 1         | 1         | 1           | 1           |                  |
| F34      | H3404D0655 | Pin                       | 2         | 2         | 2           | 2           |                  |
| F35      | H3404D0657 | Spring                    | 2         | 2         | 2           | 2           |                  |
| F36      | H3404D0656 | Cap screw                 | 4         | 4         | 4           | 4           | SM5/16(28)×4     |
| F37      | H3404D0658 | Spring                    | 2         | 2         | 2           | 2           |                  |
| F38      | H3404D0654 | Pin                       | 2         | 2         | 2           | 2           |                  |
| F39      | H3404D0651 | Guide                     | 1         | 1         | 1           | 1           |                  |
| F40      | H3404L0652 | Bushing                   | 1         | 1         | 1           | 1           |                  |

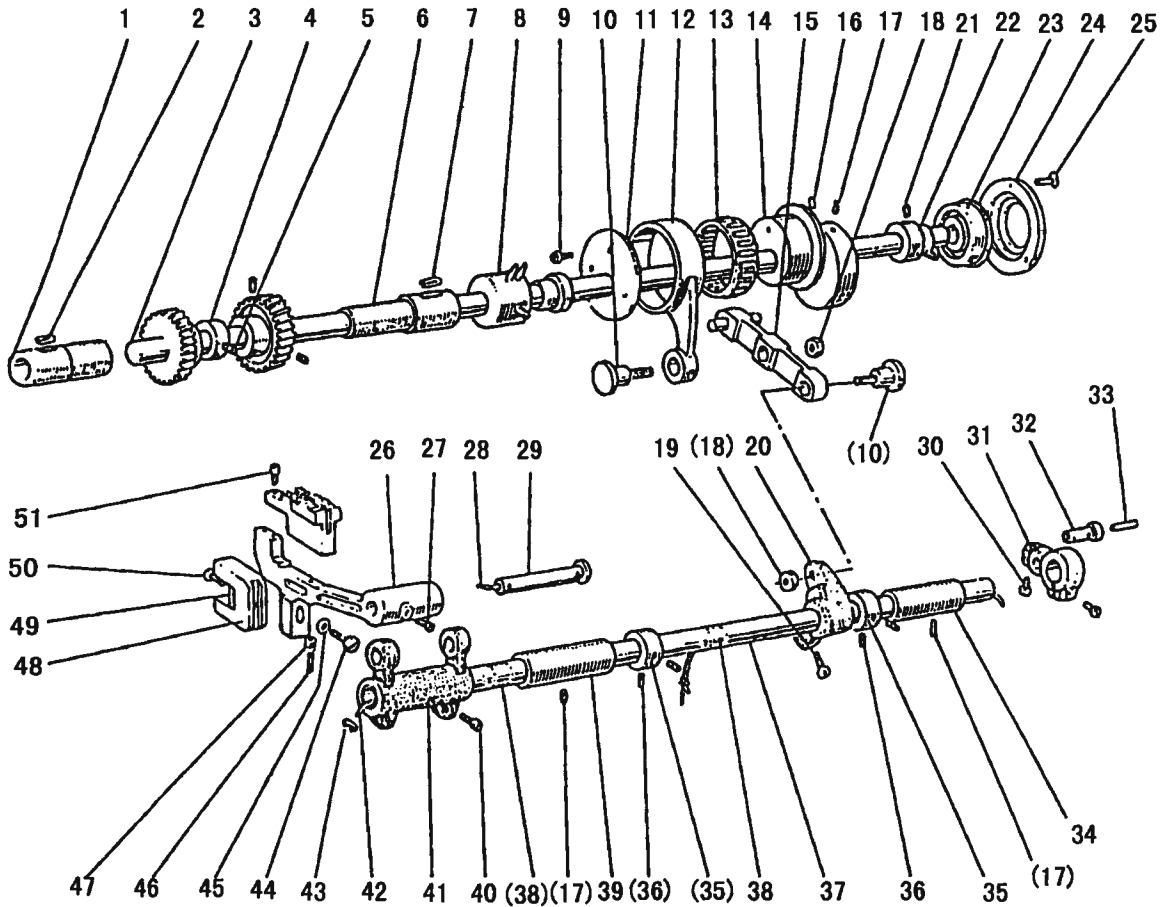
# G. STITCH REGULATOR MECHANISM



## G.STITCH REGULATOR MECHANISM

| Fig. No. | Part No.    | Description                     | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks            |
|----------|-------------|---------------------------------|-----------|-----------|-------------|-------------|--------------------|
| G01      | I13204F0651 | Feed regulator                  | 1         | 1         | 1           | 1           |                    |
| G02      | IIA113F0684 | Screw                           | 2         | 2         | 2           | 2           | SM15/64 (28) ×8.5  |
| G03      | I13200F2020 | Screw                           | 1         | 1         | 1           | 1           | SM15/64(28)×12     |
| G04      | I13206F0661 | Connecting link                 | 1         | 1         | 1           | 1           |                    |
| G05      | I13206F0662 | Eccentric shaft                 | 1         | 1         | 1           | 1           |                    |
| G06      | H3200F2060  | Reverse stitch shaft            | 1         | 1         |             |             |                    |
| G06      | I16904F8001 | Reverse stitch shaft            |           |           | 1           | 1           |                    |
| G07      | H3200F2110  | Spring                          | 1         | 1         | 1           | 1           |                    |
| G08      | IIA100F2080 | Pin                             | 1         | 1         |             |             |                    |
| G09      | HA700F2030  | Pin                             |           |           | 1           | 1           |                    |
| G10      | H3207F0671  | Arm                             | 1         | 1         |             |             |                    |
| G10      | I14905G8001 | Arm                             |           |           | 1           | 1           |                    |
| G11      | IIA800F2020 | Screw                           | 1         | 1         | 1           | 1           | SM15/64 (28) ×16.5 |
| G12      | I13207F0672 | Screw                           | 1         | 1         | 1           | 1           | SM11/64(40)×8.5    |
| G13      | IIA100F2110 | Spring washer                   | 1         | 1         |             |             |                    |
| G14      | HA113F0684  | Screw                           | 2         | 2         |             |             | SM15/64 (28) ×8.5  |
| G15      | H3216F0071  | Reverse sewing lever (complete) | 1         | 1         |             |             |                    |
| G15      | H4906G8001  | Reverse sewing lever            |           |           | 1           | 1           |                    |
| G16      | I13207F0673 | Spring                          | 1         | 1         | 1           | 1           |                    |
| G17      | H3200F2050  | Bracket for spring              | 1         | 1         |             |             |                    |
| G18      | HA300C2030  | Screw                           | 6         | 6         | 5           | 5           | SM11/64(40)-8      |
| G19      | HA720F0686  | Screw                           |           |           | 1           | 1           | SM3/16(28)×12      |
| G20      | HA720F0685  | Bushing                         |           |           | 1           | 1           |                    |
| G21      | H8504H8001  | Stitch length indicating plate  |           |           | 1           |             |                    |
| G21      | H9204F8001  | Stitch length indicating plate  |           |           |             | 1           |                    |
| G22      | HA7421F120  | Dial                            |           |           | 1           | 1           |                    |
| G23      | HA720F0683  | Stopper pin releasing lever     |           |           | 1           | 1           |                    |
| G24      | HA720F0687  | Coil spring                     |           |           | 1           | 1           |                    |
| G25      | HA109F0671  | Screw bar                       | 1         | 1         | 1           | 1           |                    |
| G26      | HA109F0673  | Screw                           | 1         | 1         |             |             | SM3/6(28)×8        |
| G27      | H3213F0702  | Dial                            | 1         |           |             |             |                    |
| G27      | H3304F0651  | Dial                            |           | 1         |             |             |                    |
| G28      | H3206F0662  | Bolt                            | 1         | 1         | 1           | 1           | SM1/4(40)×8        |
| G29      | H3210F0681  | Screw                           | 2         | 2         | 2           | 2           | M5×6               |
| G30      | H3210F0683  | Stitch regulating crank lower   | 1         | 1         | 1           | 1           |                    |
| G31      | H3200F2080  | Holding plate of reverse bar    | 1         | 1         | 1           | 1           |                    |
| G32      | HA703R0067  | Washer                          | 1         | 1         | 1           | 1           |                    |
| G33      | H3212F0692  | Reverse bar                     | 1         | 1         | 1           | 1           |                    |
| G34      | H3208G0672  | Square block                    | 2         | 2         | 2           | 2           |                    |
| G35      | H3212F0691  | Guide plate                     | 2         | 2         | 2           | 2           |                    |

# H. LOWER SHAFT & FEED ROCK SHAFT MECHANISM



## H.LOWER SHAFT & FEED ROCK SHAFT MECHANISM

| Fig. No. | Part No.    | Description                    | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|-------------|--------------------------------|-----------|-----------|-------------|-------------|------------------|
| H101     | H132132B104 | Lower shaft bushing left       | 1         | 1         | 1           | 1           |                  |
| H102     | H132132B204 | Oil wick                       | 1         | 1         | 1           | 1           |                  |
| H103     | H13200H2010 | Lower shaft                    | 1         | 1         | 1           | 1           |                  |
| H104     | H3205H0655  | Feed lifting cam               | 1         | 1         | 1           | 1           |                  |
| H05      | H3205H0654  | Screw                          | 1         | 1         | 1           | 1           | SM1/4(40)·5      |
| H106     | H32143B104  | Lower shaft bushing right      | 1         | 1         | 1           | 1           |                  |
| H107     | H32132B204  | Oil wick                       | 1         | 1         | 1           | 1           |                  |
| H108     | H32154B104  | Lower shaft bushing middle     | 1         | 1         | 1           | 1           |                  |
| H09      | HA700F2100  | Screw                          | 3         | 3         | 3           | 3           | SM11/64(40)·7    |
| H110     | H3208G0674  | Screw                          | 2         | 2         | 2           | 2           | SM1/4(24)·22     |
| H111     | H32372G208  | Washer                         | 1         | 1         | 1           | 1           |                  |
| H12      | H32372G408  | Feed connecting rod            | 1         | 1         | 1           | 1           |                  |
| H13      | H32372G308  | Needle bearing                 | 1         | 1         | 1           | 1           | K32×37·13        |
| H14      | H32372G108  | Lever feed connecting cam      | 1         |           | 1           |             |                  |
| H14      | H3305G1011  | Lever feed connecting cam      |           | 1         |             | 1           |                  |
| H15      | H32311G108  | Link                           | 1         | 1         | 1           | 1           |                  |
| H16      | HA100C2020  | Screw                          | 1         | 1         | 1           | 1           | SM15/64 (28) ×10 |
| H117     | H2405D0664  | Screw                          | 3         | 3         | 3           | 3           | SM15/64 (28) ×14 |
| H18      | H3208G0675  | Nut                            | 2         | 2         | 2           | 2           | SM1/4(24)        |
| H19      | H3208G0676  | Screw                          | 1         | 1         | 1           | 1           | SM15/64(28)×14   |
| H20      | H3208G0673  | Connecting rod crank           | 1         | 1         | 1           | 1           |                  |
| H21      | HA105D0662  | Screw                          | 2         | 2         | 2           | 2           | SM1/4 (40) ×6    |
| H22      | H3208H0662  | Bushing                        | 1         | 1         | 1           | 1           |                  |
| H23      | H3208H0661  | Ball bearing                   | 1         | 1         | 1           | 1           | 6004ZZNR/5K      |
| H24      | H3200H2060  | Bearing holder                 | 1         | 1         | 1           | 1           |                  |
| H25      | HA7311C306  | Screw                          | 3         | 3         | 3           | 3           | SM9/64 (40) ·7   |
| H26      | H3205G1111  | Feed bar                       | 1         | 1         |             |             |                  |
| H26      | H4942H8001  | Feed bar                       |           |           | 1           | 1           |                  |
| H27      | HS90131005  | Screw                          | 1         | 1         | 1           | 1           | M5·5             |
| H28      | H3205G0662  | Oil wick                       | 1         | 1         | 1           | 1           |                  |
| H29      | H32243G205  | Feed bar shaft                 | 1         | 1         | 1           | 1           |                  |
| H30      | H2012N0652  | Screw                          | 2         | 2         | 2           | 2           | SM1/4 (24) ·16   |
| H31      | H3407C0663  | Feed rock shaft crank          | 1         | 1         | 1           | 1           |                  |
| H32      | H3407C0664  | Pin                            | 1         | 1         | 1           | 1           |                  |
| H33      | H24211D405  | Oil wick                       | 1         | 1         | 1           | 1           |                  |
| H34      | H3204B0656  | Feed rock shaft crank (right)  | 1         | 1         | 1           | 1           |                  |
| H35      | HA108G0661  | Collar                         | 2         | 2         | 2           | 2           |                  |
| H36      | HA105D0662  | Screw                          | 4         | 4         | 4           | 4           | SM1/4 (40) ·4    |
| H37      | H3204G0651  | Feed rock shaft                | 1         | 1         | 1           | 1           |                  |
| H38      | H3204G0652  | Felt                           | 2         | 2         | 2           | 2           |                  |
| H39      | HA100G2120  | Feed rock shaft bushing (left) | 1         | 1         | 1           | 1           |                  |
| H40      | HA104G0012  | Screw                          | 2         | 2         | 2           | 2           | SM3/16 (28) ·12  |
| H41      | H3205G1032  | Feed rock shaft Crank (left)   | 1         | 1         |             |             |                  |

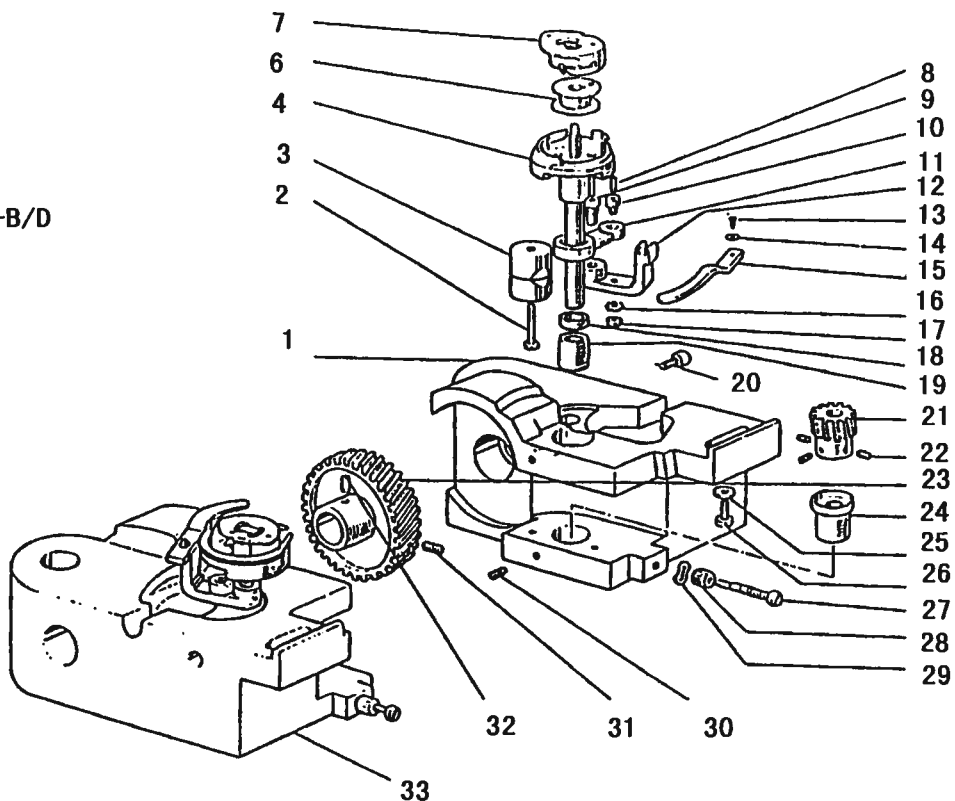
## H.LOWER SHAFT & FEED ROCK SHAFT MECHANISM

| Fig. No. | Part No.     | Description                  | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks        |
|----------|--------------|------------------------------|-----------|-----------|-------------|-------------|----------------|
| 1141     | 114905118001 | Feed rock shaft Crank (left) |           |           | 1           | 1           |                |
| 1142     | 113205G0662  | Oil wick                     | 1         | 1         | 1           | 1           |                |
| 1143     | H3200G2030   | Holder                       | 1         | 1         | 1           | 1           |                |
| H44      | H3200H2040   | Bolt                         | 1         | 1         | 1           | 1           | SM15/64(28)×18 |
| H45      | H005001060   | Washer                       | 1         | 1         | 1           | 1           | GB/T97.1 6     |
| 1146     | HS90131951   | Screw                        | 1         | 1         | 1           | 1           | M3×14          |
| H47      | H003056030   | Nut                          | 1         | 1         | 1           | 1           | M3             |
| H48      | H3205H0651   | Feed bar connecting fork     | 1         | 1         | 1           | 1           |                |
| H49      | H3205110652  | Felt                         | 1         | 1         | 1           | 1           |                |
| 1150     | H3205H0653   | Screw                        | 1         | 1         | 1           | 1           | SM1/8(44)×4    |
| H51      | H32211G205   | Bolt                         | 1         | 1         | 1           | 1           | SM1/8(40)×7    |

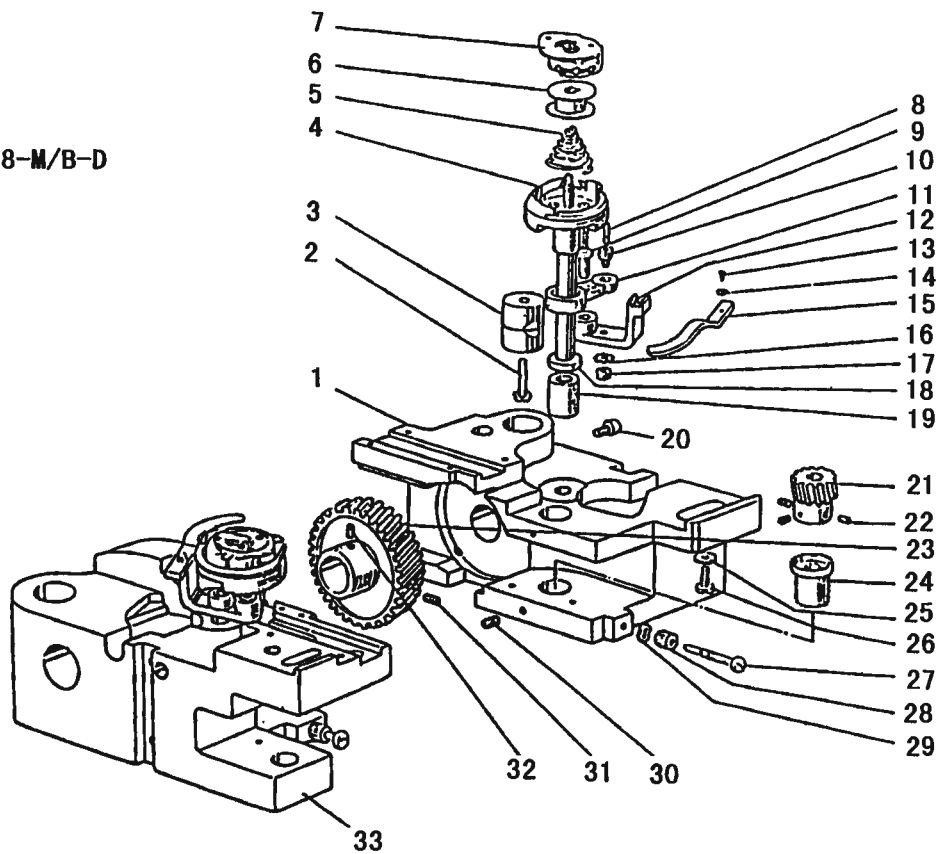


# I. HOOK SADDLE MECHANISM

GC20528-B/D



GC20528-M/B-D



# I.HOOK SADDLE MECHANISM

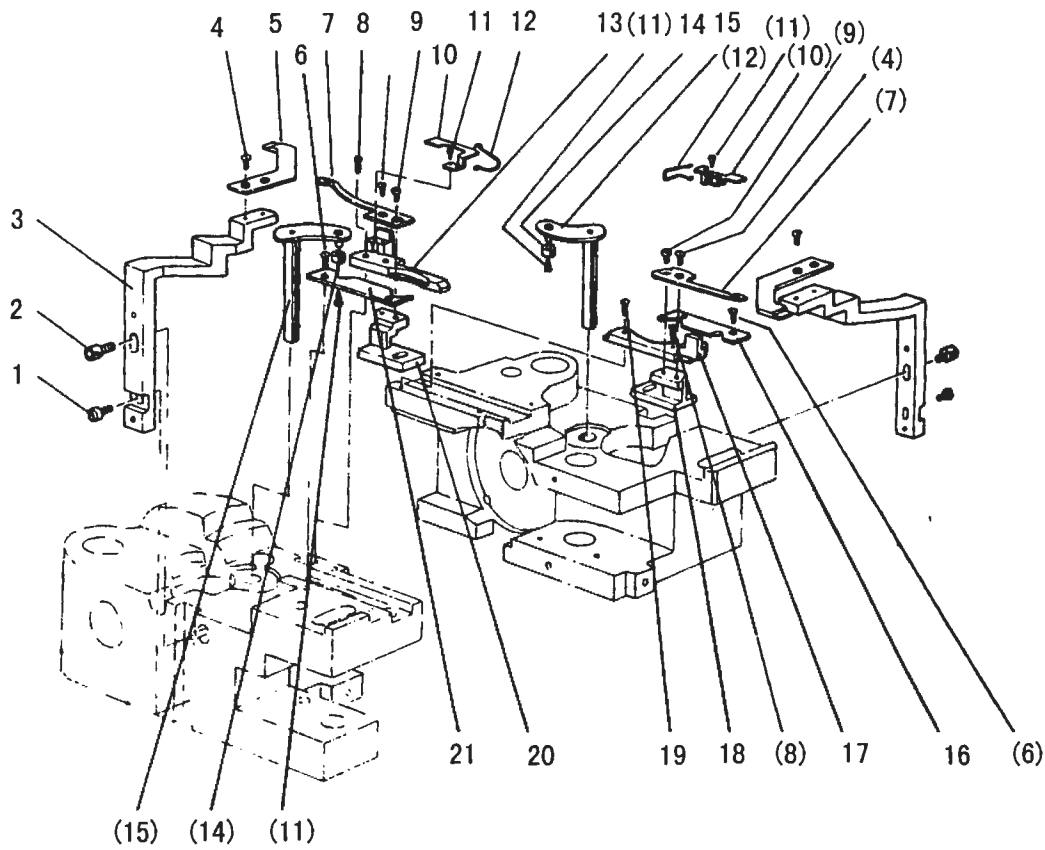
| Fig. No. | Part No.     | Description                   | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks                                 |
|----------|--------------|-------------------------------|-----------|-----------|-------------|-------------|---|
| 101      | 11320410651  | Hook saddle (right)           | 1         |           |             |             |   |
| 101      | 11330410651  | Hook saddle (right)           |           | 1         |             |             |   |
| 101      | 116904118001 | Hook saddle (right)           |           |           | 1           |             |   |
| 101      | 11490618001  | Hook saddle (right)           |           |           |             | 1           |   |
| 102      | 11320710661  | Screw                         | 2         | 2         | 2           | 2           | SM15/64(28)×30                          |
| 103      | 11320710066  | Bushing                       | 2         | 2         | 2           | 2           |   |
| 104      | 11340510652  | Hook complete                 | 2         |           |             |             |   |
| 104      | 11350012010  | Hook complete                 |           | 2         |             |             |   |
| 104      | 11850417101  | Hook complete                 |           |           | 2           |             | HSH-12-15M (3)                          |
| 104      | H9304J7101   | Hook complete                 |           |           |             | 2           | HSH-12MC (3)                            |
| 105      | H6906118001  | Spring                        |           |           | 2           |             |   |
| 105      | 11492218001  | Spring                        |           |           |             | 2           |   |
| 106      | H240012020   | Bobbin                        | 2         |           |             |             |   |
| 106      | 11330610067  | Bobbin                        |           | 2         |             |             |   |
| 106      | H850518001   | Bobbin                        |           |           | 2           |             | BO-11 <sup>1</sup> / <sub>2</sub> (A) M |
| 106      | 119305J8001  | Bobbin                        |           |           |             | 2           | BO-11 <sup>1</sup> / <sub>2</sub> (A) M |
| 107      | H340610671   | Bobbin case                   | 2         |           |             |             |   |
| 107      | 11350510651  | Bobbin case                   |           | 2         |             |             |   |
| 107      | H850618001   | Bobbin case                   |           |           | 2           |             | CP-12C                                  |
| 107      | H9306J8001   | Bobbin case                   |           |           |             | 2           | CP-12MC (3)                             |
| 108      | 11320410656  | Oil wick                      | 2         | 2         | 2           | 2           |   |
| 109      | 11321531504  | Bobbin case opener holder pin | 2         | 2         | 2           | 2           |   |
| 110      | H321531204   | Screw                         | 2         | 2         | 2           | 2           | SM3/16(32)×7.8                          |
| 111      | 11321531304  | Link                          | 2         |           | 2           |             |   |
| 111      | 11331311204  | Link                          |           | 2         |             | 2           |   |
| 112      | 11321531104  | Bobbin case opener holder     | 2         |           | 2           |             |   |
| 112      | H331311104   | Bobbin case opener holder     |           | 2         |             | 2           |   |
| 113      | H2004J0067   | Screw                         | 2         | 2         | 2           | 2           | SM9/64 (40) ×7                          |
| 114      | 11320012030  | Washer                        | 2         | 2         | 2           | 2           |   |
| 115      | 11220012020  | Opener                        | 2         |           | 2           |             |   |
| 115      | 11330510066  | Opener                        |           | 2         |             | 2           |   |
| 116      | 11005008050  | Spring washer                 | 2         | 2         | 2           | 2           | GB/T93 5                                |
| 117      | 11A104G0658  | Nut                           | 2         | 2         | 2           | 2           | SM3/16(32)                              |
| 118      | 11321211304  | Spacer                        | 2         |           | 2           |             |   |
| 118      | H331211204   | Spacer                        |           | 2         |             | 2           |   |
| 119      | H340410011   | Hook shaft bushing (upper)    | 2         |           | 2           |             |   |
| 119      | 11331211104  | Hook shaft bushing (upper)    |           | 2         |             | 2           |   |
| 120      | 11320410657  | Screw                         | 2         | 2         | 2           | 2           | SM3/16(28)×14.5                         |
| 121      | H321421204   | Gear (small)                  | 2         | 2         | 2           | 2           |   |
| 122      | 11A105D0662  | Screw                         | 6         | 6         | 6           | 6           | SM1/4 (40) ×4                           |
| 123      | H321421104   | Gear (large)                  | 2         | 2         | 2           | 2           |   |
| 124      | 11320410653  | Hook shaft bushing (lower)    | 2         | 2         | 2           | 2           |   |
| 125      | H2013J0065   | Washer                        | 2         | 2         | 2           | 2           |   |

# I.HOOK SADDLE MECHANISM

| Fig. No. | Part No.    | Description        | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks           |
|----------|-------------|--------------------|-----------|-----------|-------------|-------------|-------------------|
| 126      | 11320012050 | Screw              | 2         | 2         | 2           | 2           | SM1/4(24)×23      |
| 127      | 11320410658 | Screw              | 2         | 2         | 2           | 2           | SM3/16(28)×43     |
| 128      | 11320410659 | Nut                | 2         | 2         | 2           | 2           | SM3/16(28)        |
| 129      | 11005014050 | Spring washer      | 2         | 2         | 2           | 2           | GB/T955 5         |
| 130      | 11A305E0662 | Screw              | 4         | 4         | 4           | 4           | SM15/64 (28) ×4.5 |
| 131      | HA307C0662  | Screw              | 2         | 2         | 2           | 2           | SM1/4 (40) ×6     |
| 132      | 11320416510 | Screw              | 2         | 2         | 2           | 2           | SM1/4(40)×6.5     |
| 133      | H320910671  | Hook saddle (left) | 1         |           |             |             |                   |
| 133      | 11330710681 | Hook saddle (left) |           | 1         |             |             |                   |
| 133      | 116905H8001 | Hook saddle (left) |           |           | 1           |             |                   |
| 133      | 11491718001 | Hook saddle (left) |           |           |             | 1           |                   |

# J. UPPER FEED ROCK SHAFT MECHANISM

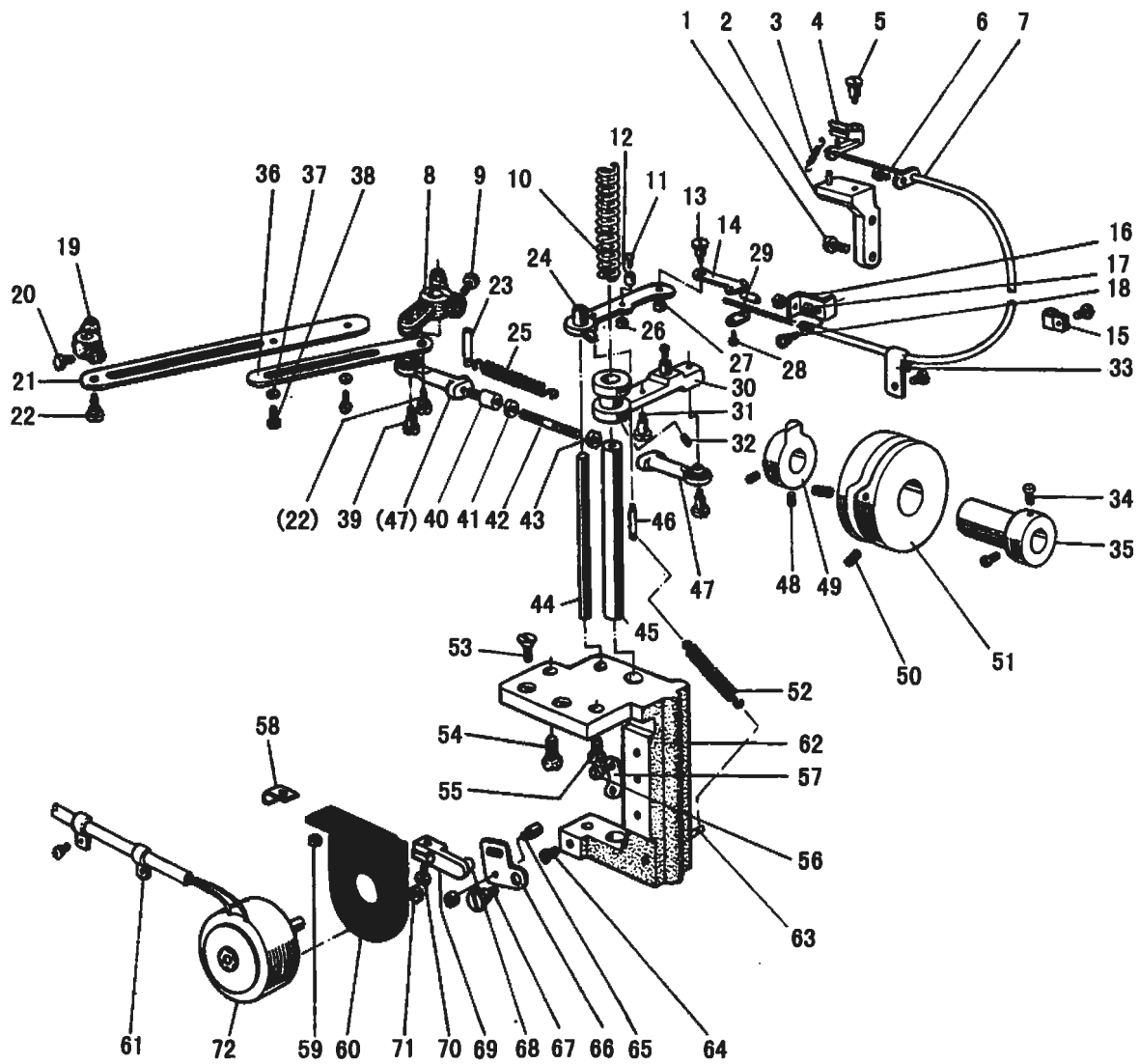
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## J.UPPER FEED ROCK SHAFT MECHANISM

| Fig. No. | Part No.   | Description           | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|------------|-----------------------|-----------|-----------|-------------|-------------|------------------|
| J01      | H4905J8001 | Screw                 |           |           | 2           | 2           | SM9/64 (40) ×7   |
| J02      | H4906J8001 | Bolt                  |           |           | 2           | 2           |                  |
| J03      | H4907J8001 | Trimming knife holder |           |           | 2           | 2           |                  |
| J04      | H4908J8001 | Screw                 |           |           | 6           | 6           | SM9/64 (40) ×5   |
| J05      | H4909J8001 | Fixed blade           |           |           | 2           | 2           |                  |
| J06      | H4914B8001 | Screw                 |           |           | 4           | 4           | SM9/64 (40) ×4   |
| J07      | H4911J8001 | Move knife            |           |           | 2           | 2           |                  |
| J08      | H4912J8001 | Screw                 |           |           | 2           | 2           | SM1/8 (40) ×9.2  |
| J09      | H4913J8001 | Screw                 |           |           | 2           | 2           | SM9/64 (40) ×4.5 |
| J10      | H4914J8001 | Spring plate          |           |           | 2           | 2           |                  |
| J11      | H4915J8001 | Screw                 |           |           | 6           | 6           | SM3/32 (56) ×3.8 |
| J12      | H4916J8001 | Reversing spring      |           |           | 2           | 2           |                  |
| J13      | H6905I8001 | Guide (left)          |           |           | 1           |             |                  |
| J14      | H4917J8001 | Guide (left)          |           |           |             | 1           |                  |
| J15      | H4920J8001 | Roller                |           |           | 2           | 2           |                  |
| J16      | H4921J8001 | Lever                 |           |           | 2           | 2           |                  |
| J17      | H4922J8001 | Cover (right)         |           |           | 1           | 1           |                  |
| J18      | H6904I8001 | Guide (right)         |           |           | 1           |             |                  |
| J19      | H4923J8001 | Guide (right)         |           |           |             | 1           |                  |
| J20      | H4924J8001 | Knife pad (right)     |           |           | 1           | 1           |                  |
| J21      | H4925J8001 | Screw                 |           |           | 1           | 1           | SM9/64 (40) ×9.5 |
| J22      | H4926J8001 | Knife pad (left)      |           |           | 1           | 1           |                  |
| J23      | H4927J8001 | Cover (left)          |           |           | 1           | 1           |                  |

# K. KNIFE MECHANISM



## K.KNIFE MECHANISM

| Fig. No. | Part No.    | Description              | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks            |
|----------|-------------|--------------------------|-----------|-----------|-------------|-------------|--------------------|
| K01      | HA300C2030  | Screw                    |           |           | 2           | 2           | SM11/64 (40) ×8    |
| K02      | H4915K7101  | Thread releading bracket |           |           | 1           | 1           |                    |
| K03      | 114918K8001 | Spring                   |           |           | 1           | 1           |                    |
| K04      | H4919K7101  | Thread releasing         |           |           | 1           | 1           |                    |
| K05      | H2400I2040  | Screw                    |           |           | 1           | 1           | SM11/64 (40) ×5    |
| K06      | HA300B2170  | Screw                    |           |           | 4           | 4           | SM11/64 (40) ×8    |
| K07      | H4923K7101  | Flexible wire complete   |           |           | 1           | 1           |                    |
| K08      | H6907J8001  | Arm                      |           |           | 1           |             |                    |
| K08      | H4912K8001  | Arm                      |           |           |             | 1           |                    |
| K09      | H4913K8001  | Bolt                     |           |           | 1           | 1           | SM15/64 (28) ×12.5 |
| K10      | H4945K8001  | Spring                   |           |           | 1           | 1           |                    |
| K11      | H4950K8001  | Screw                    |           |           | 1           | 1           | SM11/64 (40) ×3.6  |
| K12      | H4949K8001  | Roller                   |           |           | 1           | 1           |                    |
| K13      | H4952K8001  | Screw                    |           |           | 1           | 1           | SM3/16 (28) ×5     |
| K14      | H4953K8001  | Mounting plate           |           |           | 1           | 1           |                    |
| K15      | HA708P0668  | Nylon clip               |           |           | 1           | 1           |                    |
| K16      | H6905J8001  | Mounting plate           |           |           | 1           | 1           |                    |
| K17      | H003002050  | Nut                      |           |           | 2           | 2           | GB/T6170 M5        |
| K18      | H6906J8001  | Screw                    |           |           | 1           | 1           | SM3/16 (32) ×3.5   |
| K19      | H4908K8001  | Arm                      |           |           | 1           | 1           |                    |
| K20      | H4907K8001  | Bolt                     |           |           | 1           | 1           | SM15/64 (28) ×12.5 |
| K21      | H4906K8001  | Link                     |           |           | 1           | 1           |                    |
| K22      | H4905K8001  | Screw                    |           |           | 2           | 2           | M5(0.5)×7.5        |
| K23      | HA100H2080  | Pin type                 |           |           | 1           | 1           |                    |
| K24      | H4946K7101  | Thread releasing lever   |           |           | 1           | 1           |                    |
| K25      | H4943K8001  | Spring                   |           |           | 1           | 1           |                    |
| K26      | H4951K8001  | Nut                      |           |           | 1           | 1           | SM11/64 (40)       |
| K27      | H4954K8001  | Nut                      |           |           | 1           | 1           | SM3/16 (28)        |
| K28      | H4956K8001  | Screw                    |           |           | 2           | 2           | SM1/8 (44) ×7      |
| K29      | H4955K8001  | Bushing                  |           |           | 1           | 1           |                    |
| K30      | H4957K7101  | Vibrating crank          |           |           | 1           | 1           |                    |
| K31      | H4944K8001  | Screw                    |           |           | 1           | 1           | SM11/64 (40) ×5.5  |
| K32      | H3205G1114  | Screw                    |           |           | 2           | 2           | M5×5               |
| K33      | HA708P0668  | Nylon clip               |           |           | 1           | 1           |                    |
| K34      | HA113F0684  | Screw                    |           |           | 2           | 2           | SM15/64 (28) ×8.5  |
| K35      | H6904J8001  | Bushing                  |           |           | 1           | 1           |                    |
| K36      | H4909K8001  | Link                     |           |           | 1           | 1           |                    |
| K37      | H005001050  | Washer                   |           |           | 1           | 1           | GB/T97.1 5         |
| K38      | H4911K8001  | Bolt                     |           |           | 2           | 2           |                    |
| K39      | H4936K8001  | Screw                    |           |           | 2           | 2           | M5(0.5)×8.5        |
| K40      | H4987K8001  | Link screw               |           |           | 1           | 1           |                    |
| K41      | H4940K8001  | Nut (left)               |           |           | 1           | 1           | M5(left)           |
| K42      | H4939K8001  | Bolt                     |           |           | 1           | 1           |                    |

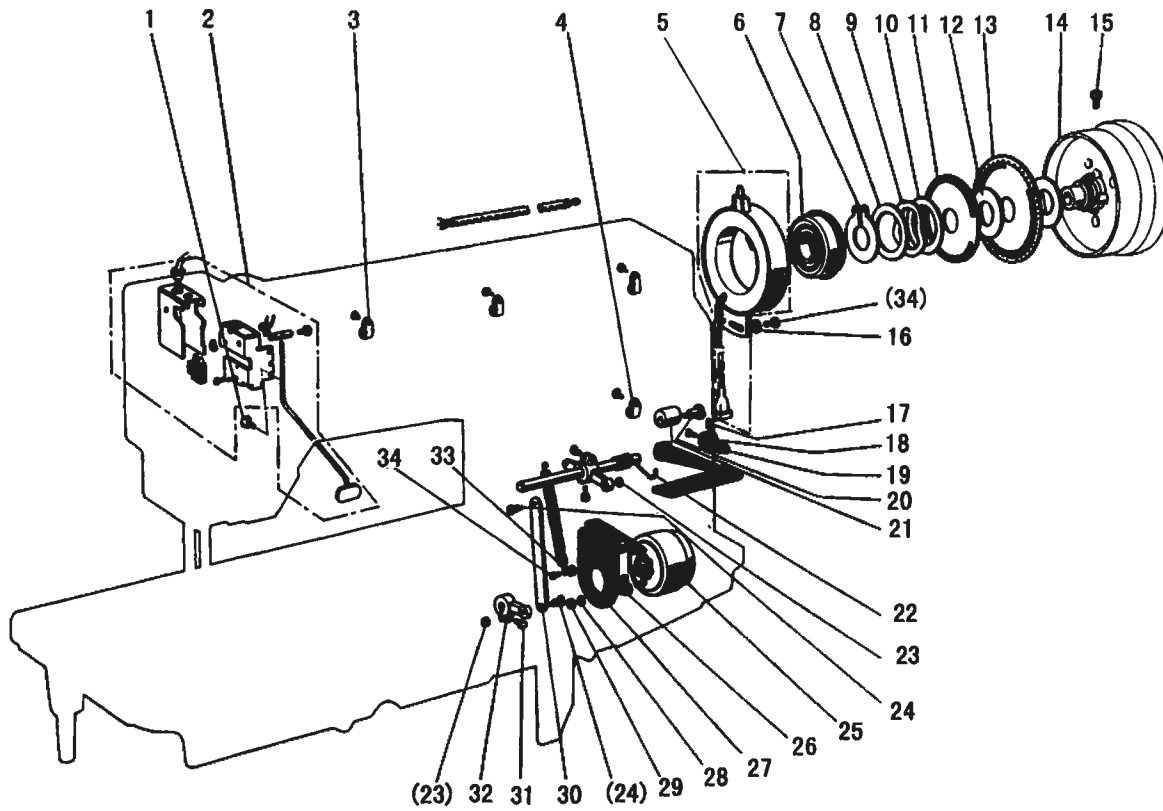
## K.KNIFE MECHANISM

| Fig. No. | Part No.   | Description        | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks           |
|----------|------------|--------------------|-----------|-----------|-------------|-------------|-------------------|
| K43      | H003002050 | Nut (right)        |           |           | 1           | 1           | GB/T6170 M5       |
| K44      | H4964K8001 | Shaft              |           |           | 1           | 1           |                   |
| K45      | H4963K8001 | Shaft              |           |           | 1           | 1           |                   |
| K46      | H4985K8001 | Screw              |           |           | 1           | 1           | SM11/64 (40) ×4   |
| K47      | H3405D0663 | Ball joint (right) |           |           | 1           | 1           |                   |
| K48      | H3205G1114 | Screw              |           |           | 2           | 2           | M4×4              |
| K49      | H4934K8001 | Cam                |           |           | 1           | 1           |                   |
| K50      | HA710E0692 | Screw              |           |           | 2           | 2           | SM1/4 (40) ×9.5   |
| K51      | H4932K8001 | Cam                |           |           | 1           | 1           |                   |
| K52      | H4986K8001 | Spring             |           |           | 1           | 1           |                   |
| K53      | H411050160 | Screw              |           |           | 2           | 2           | GB/T819.1 M5×16   |
| K54      | H2012N0652 | Screw              |           |           | 1           | 1           | SM1/4 (24) ×16    |
| K55      | H4983K8001 | Screw              |           |           | 1           | 1           | SM1/4 (24) ×13    |
| K56      | H4967K8001 | Screw              |           |           | 3           | 3           | SM11/64 (40) ×7   |
| K57      | H4966K8001 | Stopper            |           |           | 1           | 1           |                   |
| K58      | H4981K8001 | Holder             |           |           | 1           | 1           |                   |
| K59      | H003008050 | Nut                |           |           | 2           | 2           | GB/T6172.1 M5     |
| K60      | H4977K8001 | Mounting plate     |           |           | 1           | 1           |                   |
| K61      | H4980K8001 | Holder             |           |           | 2           | 2           |                   |
| K62      | H4965K8001 | Set plate          |           |           | 1           | 1           |                   |
| K63      | H3700E2080 | Pin type           |           |           | 1           | 1           |                   |
| K64      | H4969K8001 | Screw              |           |           | 1           | 1           | SM11/64 (40) ×8.5 |
| K65      | H4970K8001 | Screw              |           |           | 1           | 1           | SM11/64 (40) ×6   |
| K66      | H4971K8001 | Lever              |           |           | 1           | 1           |                   |
| K67      | H4972K8001 | Screw              |           |           | 1           | 1           | SM11/64 (40) ×6.8 |
| K68      | H4973K8001 | Pin                |           |           | 1           | 1           |                   |
| K69      | H4974K8001 | Arm                |           |           | 1           | 1           |                   |
| K70      | HA111G0683 | Screw              |           |           | 1           | 1           | SM11/64 (40) ×12  |
| K71      | HA7111N304 | Nut                |           |           | 1           | 1           | SM11/64 (40)      |
| K72      | H4979K8004 | Solenoid complete  |           |           | 1           | 1           |                   |



# L. TOUCH BACK AND DETECTOR MECHANISM

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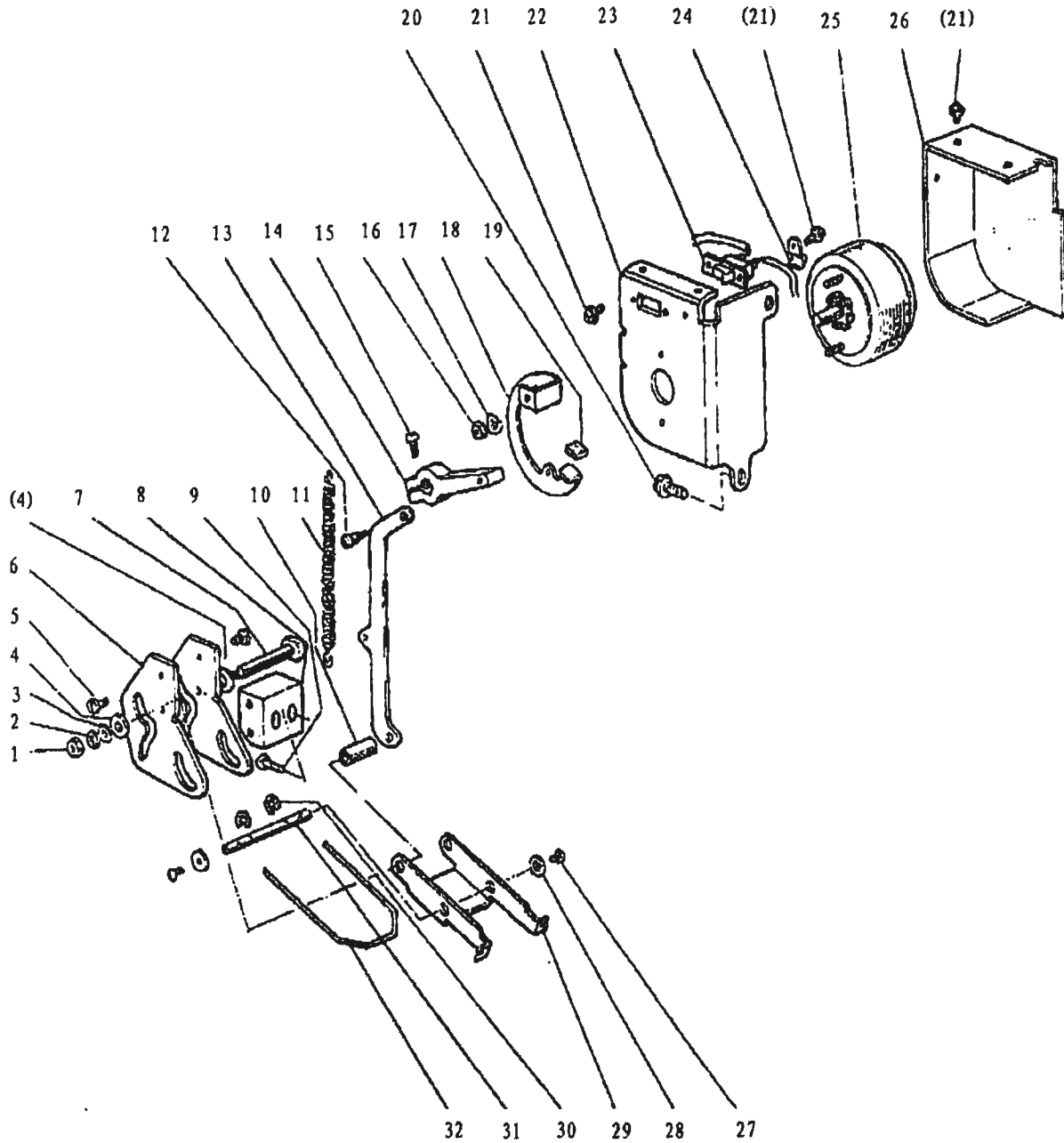


## L.TOUCH BACK AND DETECTOR MECHANISM

| Fig. No. | Part No.   | Description                   | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks           |
|----------|------------|-------------------------------|-----------|-----------|-------------|-------------|-------------------|
| L01      | H4918L8001 | Screw                         |           |           | 2           | 2           | M5                |
| L02      | H4905L7101 | Touch switch (complete)       |           |           | 1           | 1           |                   |
| L03      | HA700Q0030 | Cord holder                   |           |           | 3           | 3           |                   |
| L04      | H4922L8001 | Cord holder                   |           |           | 1           | 1           |                   |
| L05      | HA703R0065 | Detector bracket (complete)   |           |           | 1           | 1           |                   |
| L06      | H3205J0662 | Ball bearing                  |           |           | 1           | 1           | NTN 6204Z         |
| L07      | H007009300 | Retaining ring C-type         |           |           | 1           | 1           | GB/T894.1 30      |
| L08      | HA700R0060 | Washer                        |           |           | 1           | 1           |                   |
| L09      | HA700R0050 | Support spring                |           |           | 1           | 1           |                   |
| L10      | HA700R0040 | Spacer B                      |           |           | 1           | 1           |                   |
| L11      | H4928L8001 | Speed command disk F20 (up)   |           |           | 1           | 1           |                   |
| L12      | HA700R0030 | Spacer A                      |           |           | 2           | 2           |                   |
| L13      | H4930L8001 | Speed command disk F11 (down) |           |           | 1           | 1           |                   |
| L14      | H4931L8001 | Pulley (complete)             |           |           | 1           | 1           |                   |
| L15      | HA110D0672 | Screw                         |           |           | 1           | 1           | SM15/64 (28) ×12  |
| L16      | HA703R0067 | Washer                        |           |           | 1           | 1           |                   |
| L17      | HA3411D308 | Screw                         |           |           | 1           | 1           | SM15/64 (28) ×7   |
| L18      | H4936L8001 | Lever (complete)              |           |           | 1           | 1           |                   |
| L19      | HA113F0684 | Screw                         |           |           | 1           | 1           | SM15/64 (28) ×7.5 |
| L20      | H4937L8001 | Screw                         |           |           | 1           | 1           | SM15/64 (28) ×6   |
| L21      | H4938L8001 | Rubber ring                   |           |           | 1           | 1           |                   |
| L22      | H4939L8001 | Spring                        |           |           | 1           | 1           |                   |
| L23      | H4940L8001 | Nut                           |           |           | 2           | 2           | SM15/64 (28)      |
| L24      | H4941L8001 | Screw                         |           |           | 2           | 2           | SM15/64 (28) ×14  |
| L25      | H4943L8001 | Solenoid (complete)           |           |           | 1           | 1           |                   |
| L26      | H102080120 | Blot                          |           |           | 2           | 2           | GB/T5781 M8×12    |
| L27      | H6904K8001 | Set plate                     |           |           | 1           | 1           |                   |
| L28      | H005008060 | Spring washer                 |           |           | 2           | 2           | GB/T93 6          |
| L29      | H003002060 | Nut                           |           |           | 2           | 2           | GB/T6170 M6       |
| L30      | H4948L8001 | Link                          |           |           | 1           | 1           |                   |
| L31      | H4949L8001 | Blot                          |           |           | 1           | 1           | SM15/64 (28) ×13  |
| L32      | H4950L8001 | Arm                           |           |           | 1           | 1           |                   |
| L33      | H4942L8001 | Nut                           |           |           | 1           | 1           | SM11/64 (40)      |
| L34      | HA300C2030 | Screw                         |           |           | 2           | 2           | SM11/64 (40) ×8   |

# M. WIPER MECHANISM

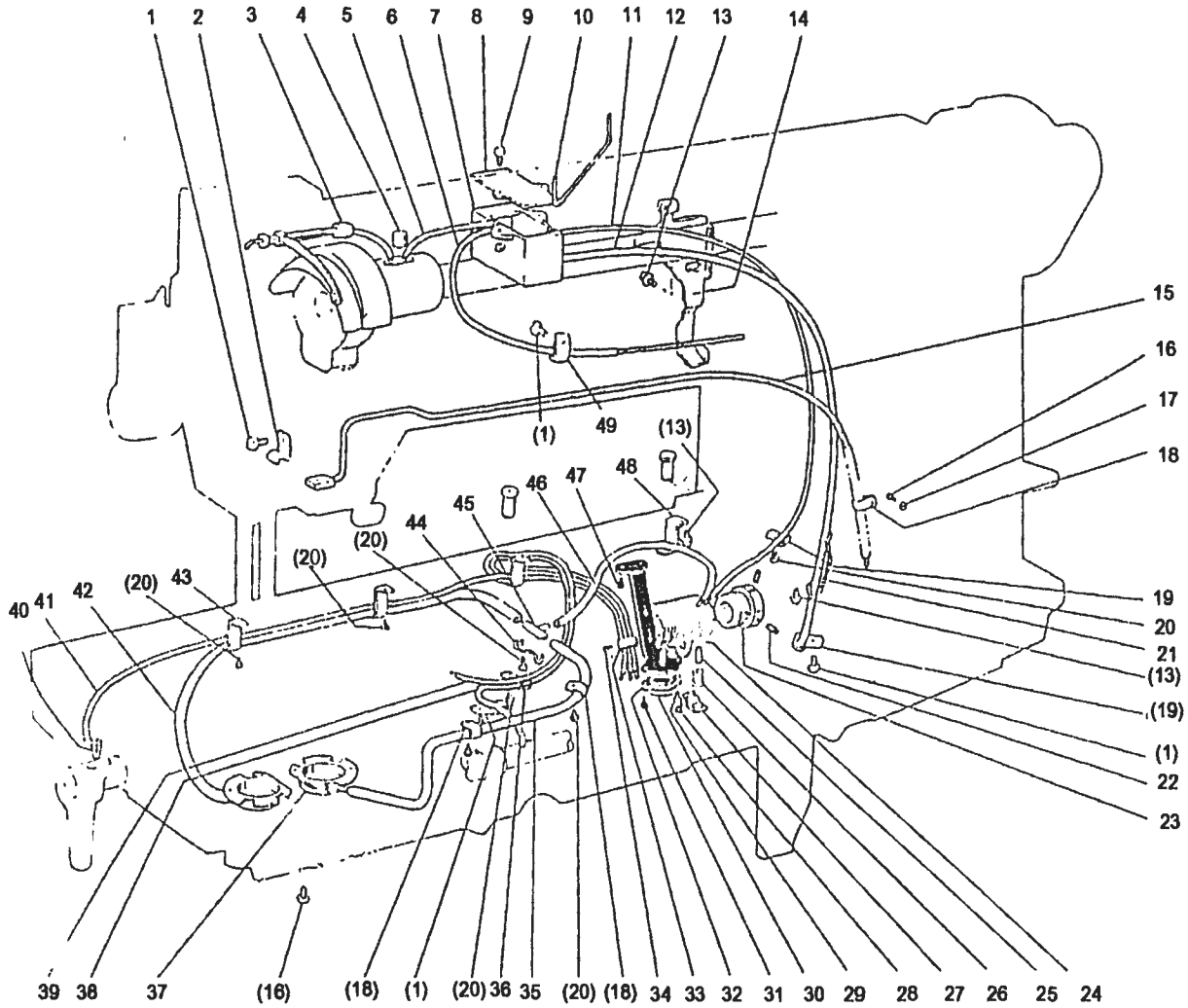
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## M.WIPER MECHANISM

| Fig. No. | Part No.   | Description          | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|------------|----------------------|-----------|-----------|-------------|-------------|------------------|
| M01      | H003002030 | Nut                  |           |           | 1           |             | GB/T6170 M3      |
| M02      | H005009030 | Spring washer        |           |           | 1           |             | GB/T859 3        |
| M03      | H005006030 | Washer               |           |           | 1           |             | GB/T96 3         |
| M04      | H005004040 | Washer               |           |           | 2           |             | GB/T848 4        |
| M05      | HA300C2030 | Screw                |           |           | 4           |             | SM11/64(40)×7    |
| M06      | H6909L8001 | Cam plate (complete) |           |           | 2           |             |                  |
| M07      | H6910L8001 | Shaft                |           |           | 1           |             |                  |
| M08      | H6911L8001 | Wiper stand          |           |           | 1           |             |                  |
| M09      | H6912L8001 | Screw                |           |           | 2           |             | SM11/64(40)×20   |
| M10      | H6913L8001 | Collar               |           |           | 1           |             |                  |
| M11      | H6914L8001 | Spring               |           |           | 1           |             |                  |
| M12      | H6915L8001 | Screw                |           |           | 1           |             | SM9/64(40)×7.4   |
| M13      | H6916L8001 | Link                 |           |           | 1           |             |                  |
| M14      | H6917L8001 | Wiper crank          |           |           | 1           |             |                  |
| M15      | HA111G0683 | Screw                |           |           | 1           |             | SM11/64(40)×11.4 |
| M16      | H003002040 | Nut                  |           |           | 2           |             | GB/T6170 M4      |
| M17      | H005009040 | Spring washer        |           |           | 2           |             | GB/T859 4        |
| M18      | H6921L8001 | Stopper plate        |           |           | 1           |             |                  |
| M19      | H6922L8001 | Cushion              |           |           | 1           |             |                  |
| M20      | HA100E2150 | Screw                |           |           | 2           |             | SM11/64(40)×8.2  |
| M21      | H409030060 | Screw                |           |           | 6           |             | GB/T818 M3×6     |
| M22      | H6924L8001 | Solenoid plate       |           |           | 1           |             |                  |
| M23      | HA708P0665 | Switch               |           |           | 1           |             |                  |
| M24      | HA700P0060 | Cord holder          |           |           | 1           |             |                  |
| M25      | H6928L8001 | Rotary solenoid      |           |           | 1           |             |                  |
| M26      | H6929L8001 | Cover                |           |           | 1           |             |                  |
| M27      | HA104G0654 | Screw                |           |           | 2           |             | SM1/8(44)×6      |
| M28      | H6932L8001 | Washer               |           |           | 2           |             |                  |
| M29      | H6930L8001 | Wiper silde plate    |           |           | 1           |             |                  |
| M30      | H007013040 | E-type stop ring     |           |           | 2           |             |                  |
| M31      | H6927L8001 | Wiper shaft          |           |           | 1           |             |                  |
| M32      | H6931L8001 | Wiper                |           |           | 1           |             |                  |

# N. OIL LUBRICATION MECHANISM



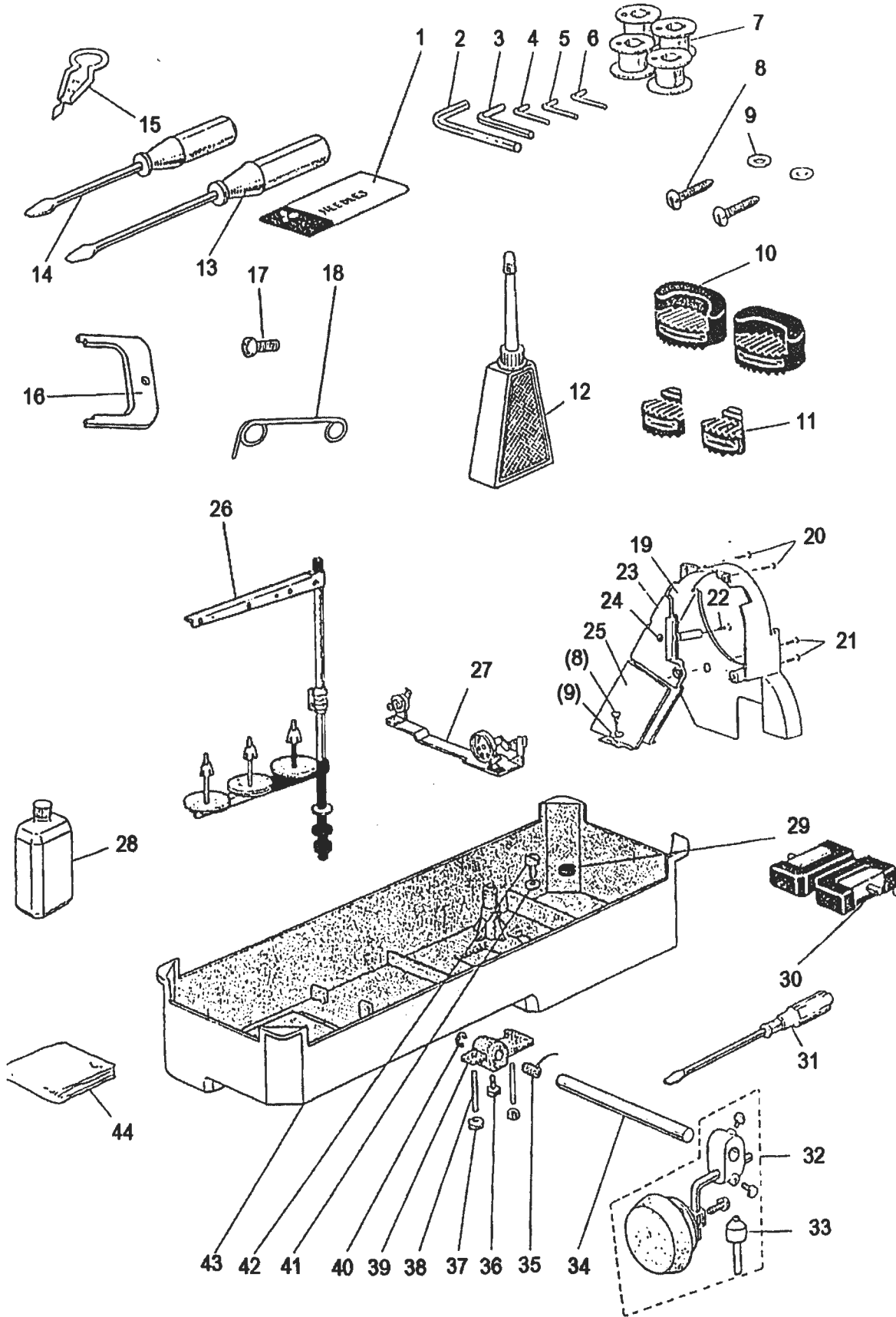
## N.OIL LUBRICATION MECHANISM

| Fig. No. | Part No.    | Description              | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks         |
|----------|-------------|--------------------------|-----------|-----------|-------------|-------------|-----------------|
| N01      | 11A300C2030 | Screw                    | 3         | 3         | 3           | 3           | SM11/64(40)×8   |
| N02      | 113200K0050 | Holder                   | 1         | 1         | 1           | 1           |                 |
| N03      | H3210K0672  | Pipe                     | 1         | 1         | 1           | 1           |                 |
| N04      | H32175B304  | Felt                     | 1         | 1         | 1           | 1           |                 |
| N05      | H3204K0032  | Oil pipe & wick complete | 1         | 1         | 1           | 1           |                 |
| N06      | H3204K0043  | Oil pipe & wick complete | 1         | 1         | 1           | 1           |                 |
| N07      | H3204K0011  | Oil tank complete        | 1         | 1         | 1           | 1           |                 |
| N08      | H3204K0659  | Gasket                   | 1         | 1         | 1           | 1           |                 |
| N09      | H411040160  | Screw                    | 2         | 2         | 2           | 2           | GB/T819.1 M4×16 |
| N10      | H4707J8001  | Holder                   | 1         | 1         | 1           | 1           |                 |
| N11      | H3204K0655  | Pipe                     | 1         | 1         | 1           | 1           |                 |
| N12      | H3204K0656  | Pipe                     | 1         | 1         | 1           | 1           |                 |
| N13      | HA300B2170  | Screw                    | 1         | 1         | 1           | 1           | SM11/64(40)×9   |
| N14      | H3200K0040  | Holder                   | 1         | 1         | 1           | 1           |                 |
| N15      | H3209K0066  | Pipe & felt complete     | 1         | 1         | 1           | 1           |                 |
| N16      | HA7311CC06  | Screw                    | 7         | 7         | 7           | 7           | SM9/64(40)×6.5  |
| N17      | H005008030  | Spring washer            | 1         | 1         | 1           | 1           | GB/T93 3        |
| N18      | H32311D606  | Holder                   | 4         | 4         | 4           | 4           |                 |
| N19      | H3200K0190  | Holder                   | 2         | 2         | 2           | 2           |                 |
| N20      | HA300B2130  | Screw                    | 7         | 7         | 6           | 6           | SM11/64(40)×5.5 |
| N21      | H3200K0200  | Holder                   | 1         | 1         | 1           | 1           |                 |
| N22      | H3230K0751  | Screw                    | 2         | 2         | 2           | 2           | SM11/64(40)×10  |
| N23      | H3230K0752  | Bushing                  | 1         | 1         | 1           | 1           |                 |
| N24      | H3215K0696  | Pipe                     | 1         | 1         | 1           | 1           |                 |
| N25      | 11110012070 | Pin                      | 1         | 1         | 1           | 1           |                 |
| N26      | 11110012090 | Spring                   | 1         | 1         | 1           | 1           |                 |
| N27      | 11110012110 | Spring holder            | 1         | 1         | 1           | 1           |                 |
| N28      | 113204D6510 | Screw                    | 1         | 1         | 1           | 1           | SM11/8(44)×4.8  |
| N29      | 113215K0693 | Screw                    | 1         | 1         | 1           | 1           | SM9/64 (40) ×5  |
| N30      | H3215K0692  | Filter                   | 1         | 1         | 1           | 1           |                 |
| N31      | 113215K0694 | Screw                    | 1         | 1         | 1           | 1           | SM9/64(40)×7    |
| N32      | 113215K4011 | Base plate complete      | 1         | 1         | 1           | 1           |                 |
| N33      | 113215K0695 | Holder                   | 1         | 1         | 1           | 1           |                 |
| N34      | H3215K0693  | Screw                    | 1         | 1         | 1           | 1           | SM9/64(40)×4.5  |
| N35      | 113210K0672 | Pipe                     | 1         | 1         | 1           | 1           |                 |
| N36      | H3200K0170  | Holder                   | 1         | 1         | 1           | 1           |                 |
| N37      | H3211K0068  | Cover complete           | 2         | 2         | 2           | 2           |                 |
| N38      | H3218K0072  | Oil pipe & wick complete | 1         | 1         | 1           | 1           |                 |
| N39      | H3219K0072  | Oil pipe & wick complete | 1         | 1         | 1           | 1           |                 |
| N40      | H3200K0180  | Oil wick                 | 3         | 3         | 3           | 3           |                 |
| N41      | H3216K0070  | Oil pipe & wick complete | 1         | 1         | 1           | 1           |                 |
| N42      | 113204K0655 | Pipe                     | 1         | 1         | 1           | 1           |                 |
| N43      | H3200K0160  | Holder                   | 2         | 2         | 2           | 2           |                 |

# N.OIL LUBRICATION MECHANISM

| Fig. No. | Part No.   | Description        | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks       |
|----------|------------|--------------------|-----------|-----------|-------------|-------------|---------------|
| N44      | H3210K0675 | Holder             | 1         | 1         | 1           | 1           | SM9/64(40)×10 |
| N45      | H3210K0671 | Oil pipe connector | 1         | 1         | 1           | 1           |               |
| N46      | HW48887-18 | Pipe               | 1         | 1         | 1           | 1           |               |
| N47      | HA100E2150 | Screw              | 2         | 2         | 2           | 2           |               |
| N48      | H3200K0250 | Holding plate      | 1         | 1         | 1           | 1           |               |
| N49      | H3200K0030 | Holder             | 1         | 1         | 1           | 1           |               |

O. ACCESSORIES





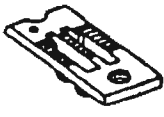
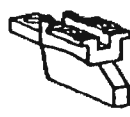




## O.ACCESSORIES

| Fig. No. | Part No.   | Description                            | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks       |
|----------|------------|--|-----------|-----------|-------------|-------------|---------------|
| O01      | H3204D0658 | Needle DP×5#14                         | 6         |           | 6           |             | DP×5 #14      |
| O01      | H3300L0020 | Needle DP×5#14                         |           | 6         |             | 6           | DP×5-#21      |
| O02      | H3200L0050 | Socket wrench 2.5                      | 1         | 1         | 1           | 1           |               |
| O03      | H3200L0060 | Socket wrench 3                        |           |           | 1           | 1           |               |
| O04      | H4905N8001 | Socket wrench 2                        |           |           | 1           | 1           |               |
| O05      | H3404M0651 | Socket wrench 1/16                     | 1         | 1         | 1           | 1           |               |
| O06      | H8504M8001 | Socket wrench 1.5                      |           |           | 1           | 1           |               |
| O07      | H2400I2020 | Bobbin                                 | 4         |           |             |             |               |
| O07      | H3306I0067 | Bobbin                                 |           | 4         |             |             |               |
| O07      | H8505I8001 | Bobbin                                 |           |           | 4           |             |               |
| O07      | H9305J8001 | Bobbin                                 |           |           |             | 4           |               |
| O08      | H801045200 | Screw                                  | 4         | 4         | 4           | 4           | GB/T99 4.5×20 |
| O09      | HA300J2230 | Washer                                 | 4         | 4         | 4           | 4           |               |
| O10      | H3200L0020 | Vibration preventing rubber            | 2         | 2         | 2           | 2           |               |
| O11      | H3200L0030 | Vibration preventing rubber            | 2         | 2         | 2           | 2           |               |
| O12      | HA100J2110 | Oiler                                  | 1         | 1         | 1           | 1           |               |
| O13      | HA300J2200 | Screw driver (middle)                  | 1         | 1         | 1           | 1           |               |
| O14      | HA300J2210 | Screw driver (small)                   | 1         | 1         | 1           | 1           |               |
| O15      | H3207L0651 | Thread a needle kit                    | 1         | 1         | 1           | 1           |               |
| O16      | HA704S0654 | Adjusting plate for speed command disc |           |           | 1           | 1           |               |
| O17      | H409030060 | Screw                                  |           |           | 1           | 1           | GB/T818 M3×6  |
| O18      | H4907N8001 | Thread guide                           |           |           | 1           | 1           |               |
| O19      | H2008O0068 | Belt cover 1                           | 1         | 1         | 1           | 1           |               |
| O20      | HA300B2170 | Screw                                  | 2         | 2         | 2           | 2           | SM11/64(40)×8 |
| O21      | HA300J2280 | Screw                                  | 2         | 2         | 2           | 2           | SM11/64(28)×8 |
| O22      | HA300J2250 | Screw                                  | 1         | 1         | 1           | 1           | M4×8          |
| O23      | H2008O0070 | Belt cover 2                           | 1         | 1         | 1           | 1           |               |
| O24      | H003008040 | Nut                                    | 1         | 1         | 1           | 1           | GB/T6172.1 M4 |
| O25      | HA305J0665 | Belt cover 3                           | 1         | 1         | 1           | 1           |               |
| O26      | H3200L0120 | Cotton Stand                           | 1         | 1         | 1           | 1           |               |
| O27      | H3200L0190 | Bobbin winder                          | 1         |           |             |             | black         |
| O27      | H3300L0040 | Bobbin winder                          |           | 1         |             |             | black         |
| O27      | HA706S0067 | Bobbin winder                          |           |           | 1           | 1           | gray          |
| O28      | H3200L0130 | Oil can                                | 1         | 1         | 1           | 1           |               |
| O29      | HA100J2120 | Magnet block for reservoir             | 1         | 1         | 1           | 1           |               |
| O30      | HA307J0067 | Hinge complete                         | 1         | 1         | 1           | 1           |               |
| O31      | HA300J2070 | Screw driver (large)                   | 1         | 1         | 1           | 1           |               |
| O32      | H3214L0067 | Small parts                            | 1         | 1         | 1           | 1           |               |
| O33      | H3214L2011 | Knee lifter pin                        | 2         | 2         | 2           | 2           |               |
| O34      | H3213L0662 | Knee lifter shaft                      | 1         | 1         | 1           | 1           |               |
| O35      | HA104J0657 | Spring                                 | 1         | 1         | 1           | 1           |               |
| O36      | HA106J0664 | Bolt                                   | 1         | 1         | 1           | 1           |               |
| O37      | HA104J6510 | Nut                                    | 1         | 1         | 1           | 1           | SM15/64 (28)  |

## O.ACCESSORIES

| Fig. No. | Part No.    | Description       | GC20528-M | GC20528-B | GC20528-M-D | GC20528-B-D | Remarks          |
|----------|-------------|-------------------|-----------|-----------|-------------|-------------|------------------|
| O38      | 11A104J0659 | Screw             | 1         | 1         | 1           | 1           | SM15/64 (28) ×27 |
| O39      | 113213L0664 | Knee lifter crank | 1         | 1         | 1           | 1           |                  |
| O40      | 11007013090 | E-type stop ring  | 2         | 2         | 2           | 2           | GB/T896 9        |
| O41      | HA104J0653  | Washer            | 2         | 2         | 2           | 2           |                  |
| O42      | HA104J0652  | Screw             | 1         | 1         | 1           | 1           | SM5/64 (28) ×8.2 |
| O43      | H3213L0661  | Oil reservoir     | 1         | 1         | 1           | 1           |                  |
| O44      | HA100J2180  | Vinyl cover       | 1         | 1         | 1           | 1           |                  |
| O45      | 113218L0681 | Felt              | 1         | 1         | 1           | 1           |                  |

# Gauge Parts List

|                    |  |  |  |  |  |  |
|--------------------|---|---|---|--|---|---|
| Gauge Size         | Needle Plate  | Feed Dog  | Presser Foot  | Needle Clamp   | Slide Plate (L)   | Slide Plate (R)   |
| <b>GC20528-M</b>   |   |   |   |  |   |   |
| 1/8 (3.2mm)        | H3200B2220  | H3200G2100  | H3215E0066  | H3400C2080   | H3200B2140  | H3200B2150  |
| 3/16 (4.9mm)       | H3200B2240  | H3200G2120  | H3217E0068  | H3400C2090   | H3200B2140  | H3200B2150  |
| 1/4 (6.4mm)        | H3200B2110  | H32211G305  | H3206E0065  | H3410C3013   | H3200B2140  | H3200B2150  |
| 5/16 (8mm)         | H3200B2260  | H3200G2140  | H3219E0070  | H3400C2100   | H3200B2350  | H3200B2150  |
| 3/8 (9.5mm)        | H3200B2270  | H3200G2150  | H3220E0071  | H3400C2110   | H3200B2350  | H3200B2150  |
| 1/2 (12.7mm)       | H3200B2280  | H3200G2030  | H3221E0072  | H3400C2120   | H3200B2360  | H3200B2150  |
| <b>GC20528-B</b>   |   |   |   |  |   |   |
| 1/8 (3.2mm)        | H3300B2140  | H3300G2100  | H3307E0068  | H3400C2080   | H3200B2140  | H3200B2150  |
| 3/16 (4.9mm)       | H3300B2160  | H3300G2120  | H3305E0066  | H3400C2090   | H3200B2140  | H3200B2150  |
| 1/4 (6.4mm)        | H3300B2020  | H3304G0011  | H3304E0065  | H3410C3013   | H3200B2140  | H3200B2150  |
| 5/16 (8mm)         | H3300B2180  | H3300G2140  | H3306E0067  | H3400C2100   | H3200B2350  | H3200B2150  |
| 3/8 (9.5mm)        | H3300B2190  | H3300G2150  | H3308E0069  | H3400C2110   | H3200B2350  | H3200B2150  |
| 1/2 (12.7mm)       | H3300B2060  | H3300G2030  | H3309E0070  | H3400C2120   | H3200B2360  | H3200B2150  |
| <b>GC20528-M-D</b> |   |   |   |  |   |   |
| 1/8 (3.2mm)        | H6910B8001  | H6910G8001  | H3215E0066  | H3400C2080   | H4732B8001  | H4733B8001  |
| 3/16 (4.9mm)       | H6906B8001  | H6912G8001  | H3217E0068  | H3400C2090   | H4732B8001  | H4733B8001  |
| 1/4 (6.4mm)        | H6908B8001  | H6904G8001  | H3204E0065  | H3410C3013   | H4732B8001  | H4733B8001  |
| 5/16 (8mm)         | H6914B8001  | H6914G8001  | H3219E0070  | H3400C2100   | H4746B8001  | H4733B8001  |
| 3/8 (9.5mm)        | H6915B8001  | H6915G8001  | H3220E0071  | H3400C2110   | H4746B8001  | H4733B8001  |
| 1/2 (12.7mm)       | H6916B8001  | H6916G8001  | H3221E0072  | H3400C2120   | H4747B8001  | H4733B8001  |
| <b>GC20528-B-D</b> |   |   |   |  |   |   |
| 1/8 (3.2mm)        | H9208B8001  | H9206G8001  | H3307E0068  | H3400C2080   | H4732B8001  | H4733B8001  |
| 3/16 (4.9mm)       | H9210B8001  | H9208G8001  | H3305E0066  | H3400C2090   | H4732B8001  | H4733B8001  |
| 1/4 (6.4mm)        | H9204B8001  | H9204G8001  | H3304E0065  | H3410C3013   | H4732B8001  | H4733B8001  |
| 5/16 (8mm)         | H9212B8001  | H9210G8001  | H3306E0067  | H3400C2100   | H4746B8001  | H4733B8001  |
| 3/8 (9.5mm)        | H9213B8001  | H9211G8001  | H3308E0069  | H3400C2110   | H4746B8001  | H4733B8001  |
| 1/2 (12.7mm)       | H9214B8001  | H9212G8001  | H3309E0070  | H3400C2120   | H4747B8001  | H4733B8001  |