

**SERVICE MANUAL  
FOR**

**DB2-B797  
DB2-B798**

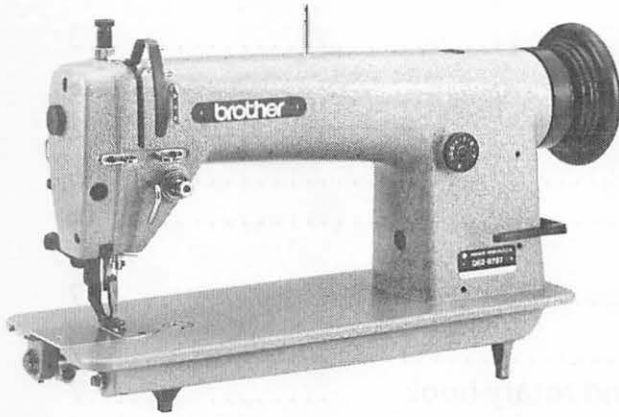
**SINGLE NEEDLE ADJUSTABLE TOP AND  
BOTTOM FEED LOCK STITCH MACHINE**



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# SPECIFICATIONS



[B797]

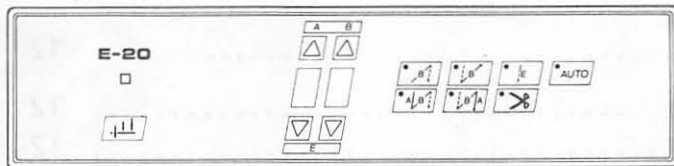


[B798]

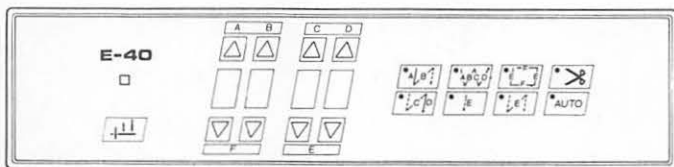
Options are as follows.

Operation panel

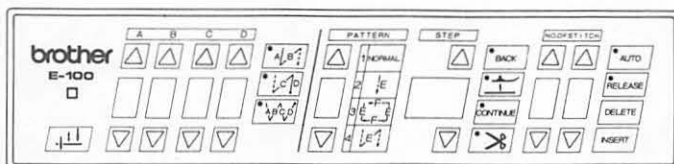
E - 20



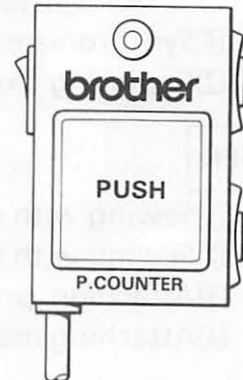
E - 40



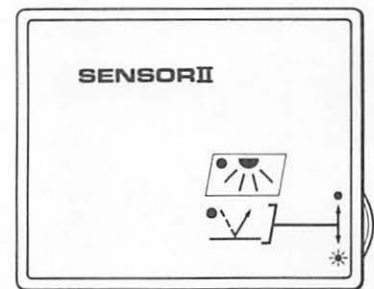
E - 100



Production counter



Material end sensor

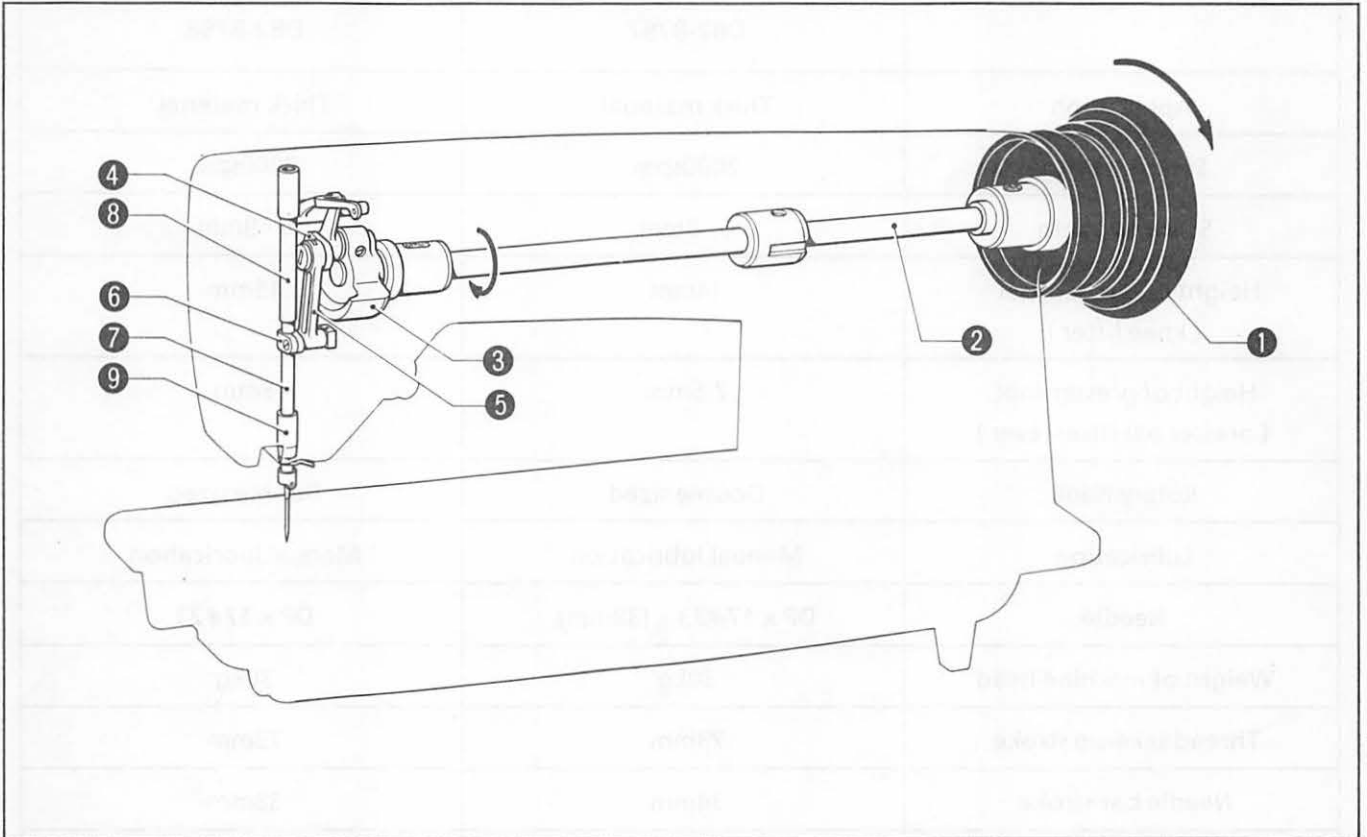


Use one of the operation panels and the sensor together.

|  | DB2-B797  | DB2-B798   |
|--|---|--|
| Application  | Thick material  | Thick material   |
| Sewing speed   | 2000spm   | 2000spm  |
| Sewing length  | 0 - 8mm   | 0 - 9mm  |
| Height of presser foot<br>( knee lifter )              | 14mm  | 15mm   |
| Height of presser foot<br>( presser bar lifter lever ) | 7.5mm   | 8mm  |
| Rotary hook  | Double sized  | Double sized   |
| Lubrication  | Manual lubrication  | Manual lubrication   |
| Needle   | DP x 17#23 (39mm)   | DP x 17#23   |
| Weight of machine head                                 | 30kg  | 30kg   |
| Thread take-up stroke                                  | 73mm  | 73mm   |
| Needle bar stroke                                      | 34mm  | 38mm   |
| Presser foot stroke                                    | 4.5mm   | 4.5mm  |
| Feeding foot stroke                                    | 2 - 4.5mm   | 2.2 - 4mm  |
| Height of feed dog                                     | 1.2mm   | 1.2mm  |
| Durability   | <ul style="list-style-type: none"> <li>● Thread take-up and needle bar crank have bearings.</li> <li>● Upper feed rock lever uses stud screws.</li> </ul> | <ul style="list-style-type: none"> <li>● Thread take-up and needle bar crank do not have bearings.</li> <li>● Upper feed rock lever uses taper threads.</li> </ul> |

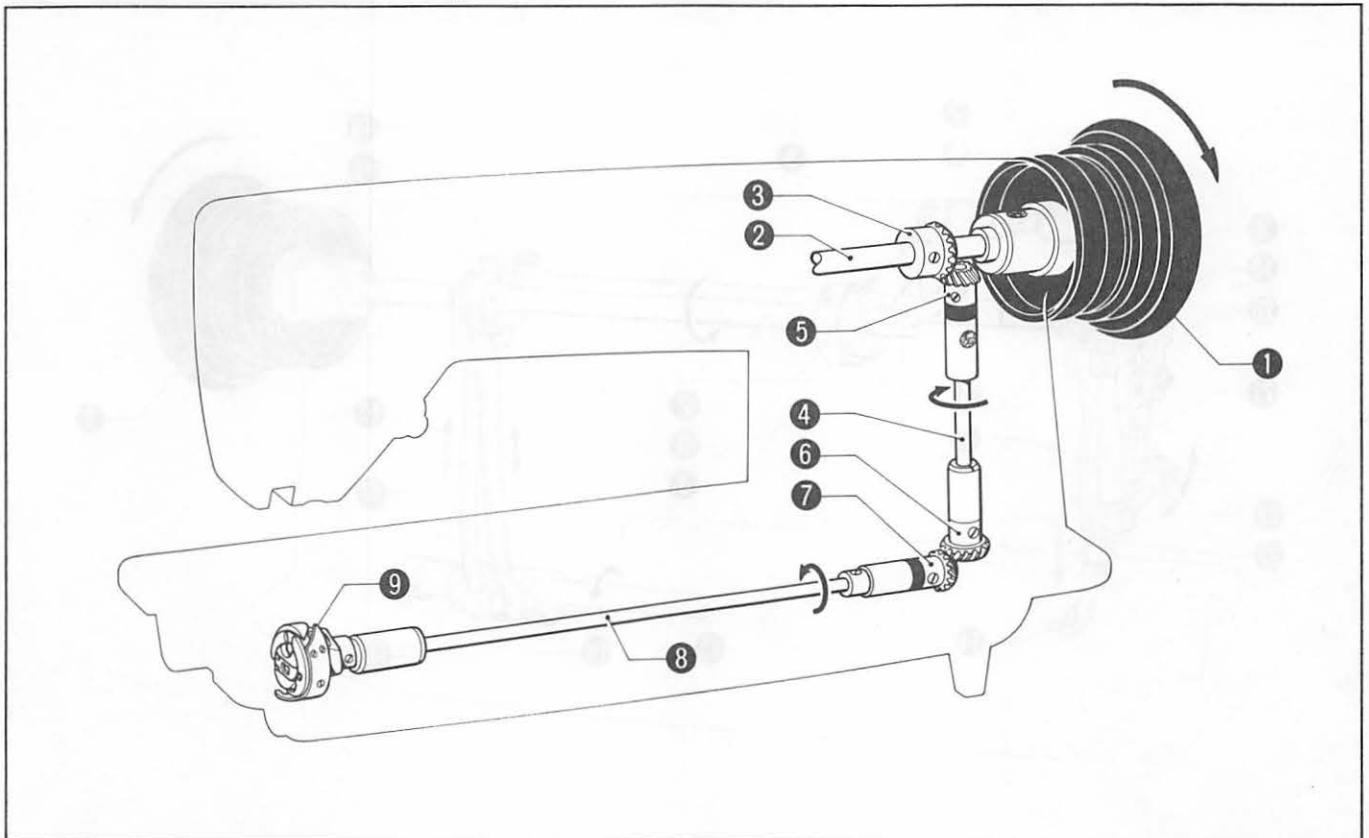
## MECHANICAL DESCRIPTIONS

### 1 Upper shaft and needle bar mechanism



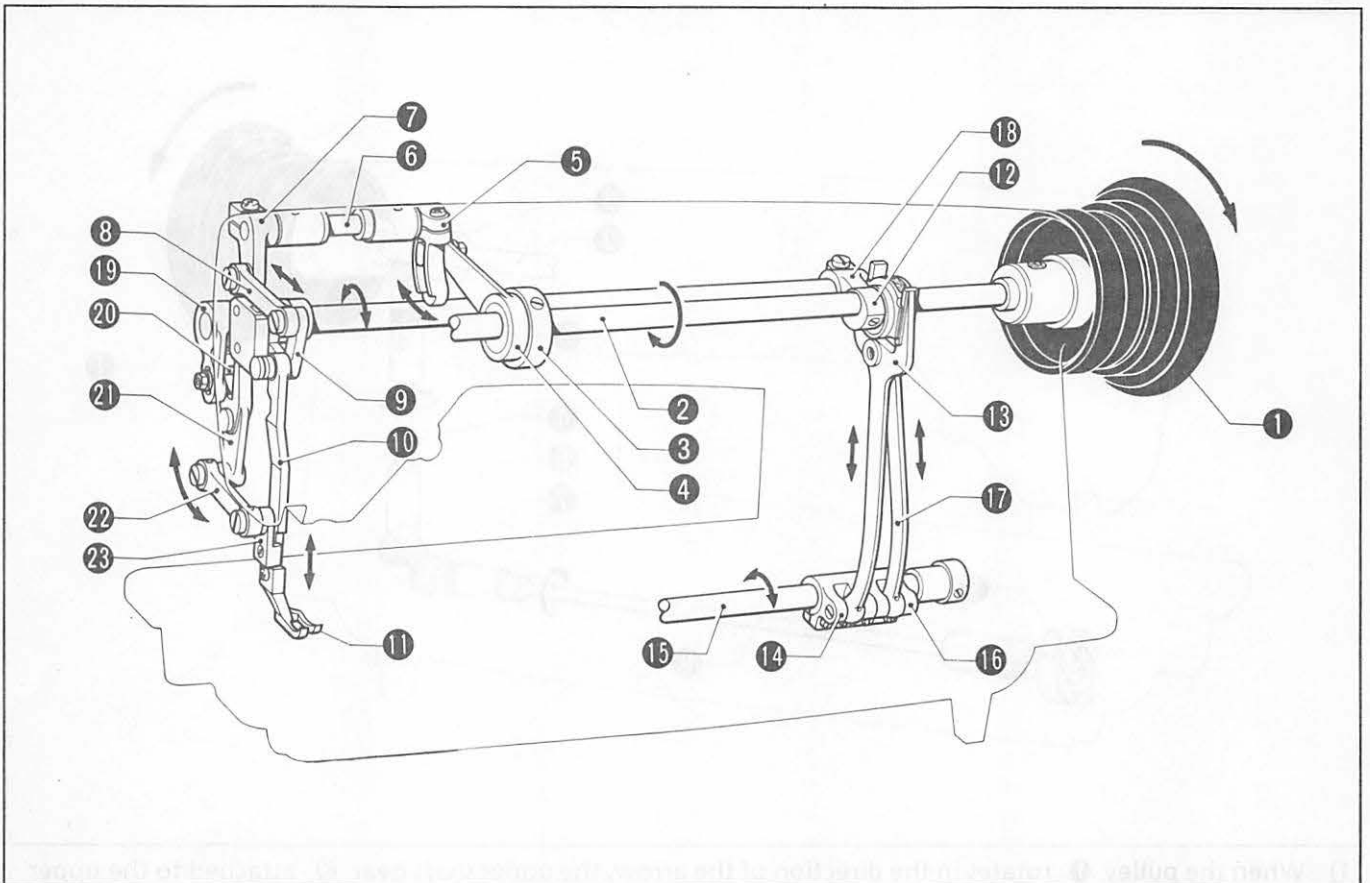
- 1) When the pulley ① rotates in the direction of the arrow, the upper shaft ② rotates.
- 2) The upper shaft ② then rotates the counter weight ③.
- 3) The counter weight ③ in turn rotates the attached needle bar crank ④.
- 4) The needle bar crank ④ then rotates the thread take-up lever ⑤.
- 5) The thread take-up lever ⑤ moves the needle bar ⑦, attached to the needle bar clamp ⑥, up and down.
- 6) The needle bar ⑦ is guided by the needle bar bushings, (U) ⑧ and (D) ⑨.

## 2 Lower shaft and rotary hook mechanism



- 1) When the pulley ① rotates in the direction of the arrow, the upper shaft gear ③ attached to the upper shaft ② also rotates.
- 2) The upper shaft gear ③ rotates the vertical shaft gear (U) ⑤ attached to the top of the vertical shaft ④.
- 3) The vertical shaft gear (U) ⑤ then rotates the vertical shaft gear (D) ⑥ attached to the end of the vertical shaft ④.
- 4) The vertical shaft gear (D) ⑥ in turn rotates the lower shaft gear ⑦.
- 5) The lower shaft gear ⑦ then rotates the lower shaft ⑧.
- 6) The lower shaft ⑧ rotates the rotary hook ⑨.

### 3 Upper feed mechanism



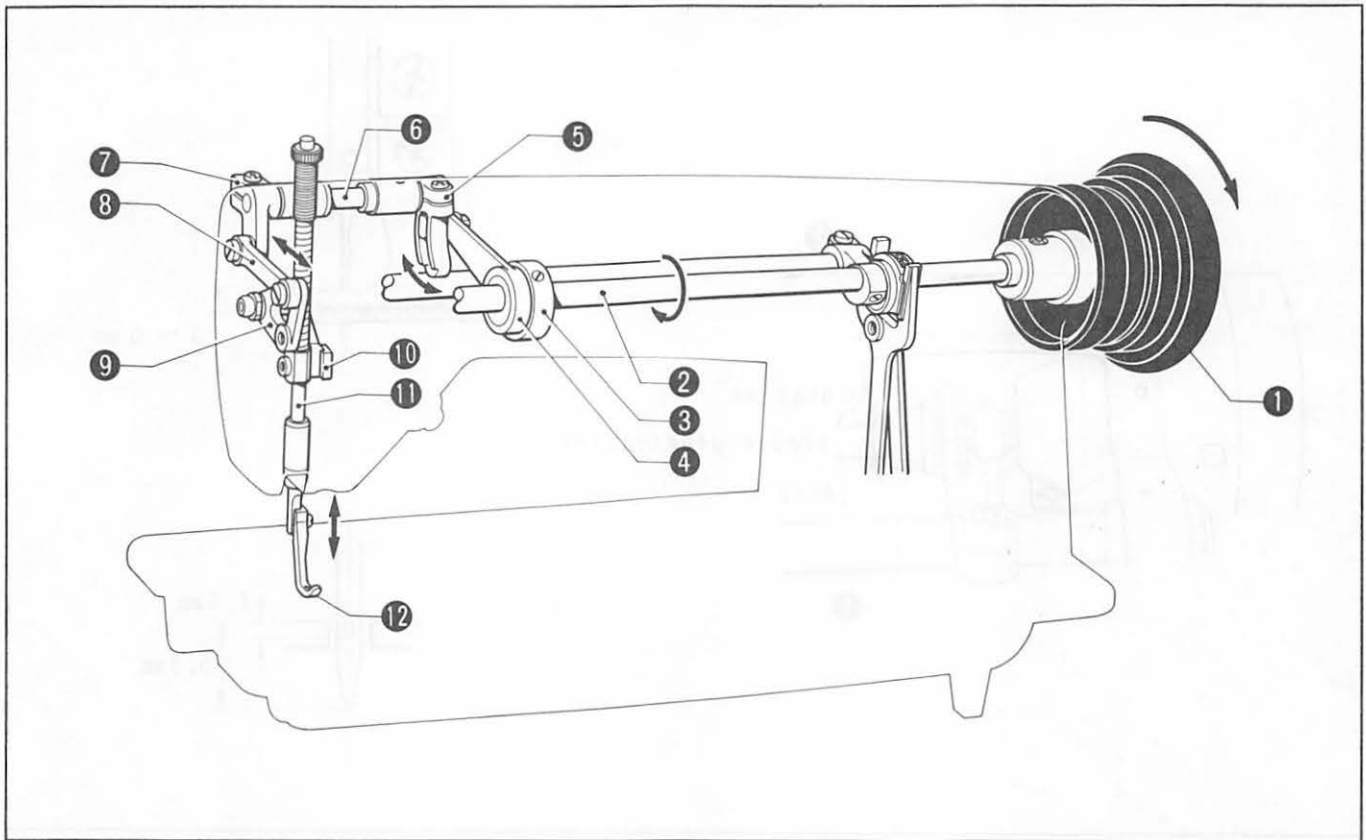
#### <Up and down movement>

- 1) When the pulley ① rotates in the direction of the arrow, the upper shaft ② rotates.
- 2) The upper shaft ② rotates the upper feed lifting eccentric wheel ③.
- 3) The upper feed lifting eccentric wheel ③ then rotates the attached upper lifting feed connector ④.
- 4) The upper lifting feed connector ④ pivots the upper feed lifting rock arm (R) ⑤.
- 5) The upper feed lifting rock arm (R) ⑤ then pivots the upper feed lifting rock shaft ⑥.
- 6) The upper feed lifting rock shaft ⑥ in turn pivots the upper feed lifting rock arm ⑦.
- 7) The upper feed lifting rock arm ⑦ moves the link (L) ⑧ back and forth.
- 8) The link (L) ⑧ moves the upper feed lifting lever ⑨ up and down.
- 9) The upper feed lifting lever ⑨ transmits an up-and-down movement to the attached feeding foot connector ⑩.
- 10) The feeding foot connector ⑩ moves the feeding foot ⑪ up and down.

#### <Back and forth movement>

- 1) When the pulley ① rotates in the direction of the arrow, the upper shaft ② rotates.
- 2) The upper shaft ② moves the feed cam sleeve ⑫ up and down.
- 3) The feed cam sleeve ⑫ moves the feed forked connector ⑬ up and down.
- 4) The feed forked connector ⑬ pivots the feed rock shaft arm ⑭.
- 5) The feed rock shaft arm ⑭ then pivots the feed rock shaft ⑮.
- 6) The feed rock shaft ⑮ in turn pivots the feed rock shaft arm ⑯.
- 7) The feed rock shaft arm ⑯ moves the upper feed rock connector (L) ⑰ up and down.
- 8) The upper feed rock connector (L) ⑰ pivots the upper feed rock arm (R) ⑱.
- 9) The upper feed rock arm (R) ⑱ then pivots the point of the upper feed rock shaft assembly ⑲.
- 10) The upper feed rock shaft assembly ⑲ pivots the roller stud assembly ⑳.
- 11) The roller stud assembly ⑳ then pivots the upper feed rock lever ㉑.
- 12) The upper feed rock lever ㉑ moves the link (S) ㉒ back and forth.
- 13) The link (S) ㉒ then moves the feeding foot connector bracket ㉓ back and forth.
- 14) The feeding foot connector bracket ㉓ then transmits this back-and-forth movement to the feeding foot connector ⑩.
- 15) The feeding foot connector ⑩ moves the feeding foot ⑪ back and forth.

#### 4 Presser foot mechanism

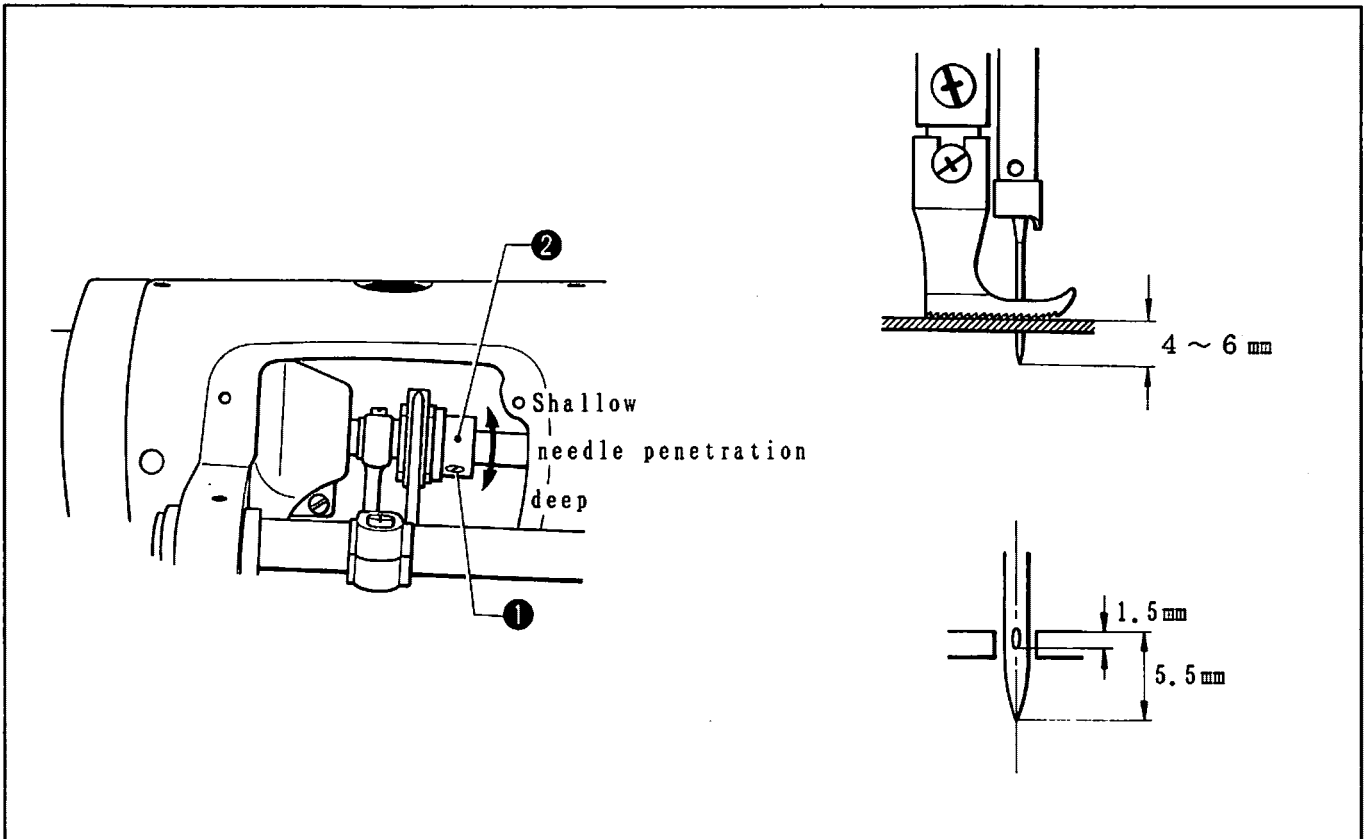


- 1) When the pulley ① rotates in the direction of the arrow, it rotates the upper shaft ②.
- 2) The upper shaft ② rotates the upper feed lifting eccentric wheel ③.
- 3) The upper feed lifting eccentric wheel ③ then rotates the attached upper lifting feed connector ④.
- 4) The upper lifting feed connector ④ pivots the upper feed lifting rock arm (R) ⑤.
- 5) The upper feed lifting rock arm (R) ⑤ then pivots the upper feed lifting rock shaft ⑥.
- 6) The upper feed lifting rock shaft ⑥ in turn pivots the upper feed lifting rock arm ⑦.
- 7) The upper feed lifting rock arm ⑦ moves the link (L) ⑧ back and forth.
- 8) The link (L) ⑧ then moves the upper feed lifting lever ⑨ back and forth.
- 9) The upper feed lifting lever ⑨ in turn moves the presser foot bar bracket ⑩ back and forth.
- 10) The presser foot bar bracket ⑩ then transmits this back-and-forth movement to the presser bar ⑪.
- 11) The presser bar ⑪ moves the presser foot ⑫ up and down.



# STANDARD ADJUSTMENT

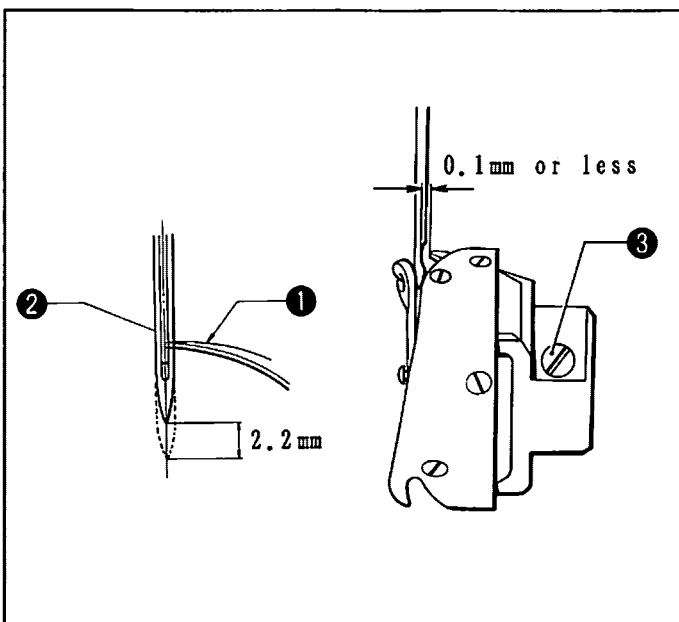
## 1 Adjusting feed timing



- 1) Turn the pulley to make the feed dog even with the needle plate top surface.
- 2) Loosen the screw and detach the rear plate.
- 3) Loosen the two screws ①. Adjust the needle penetration to 4-6mm shown in the figure above by turning the feed cam ② in the direction of the arrow.

## 2 Adjusting timing between needle and rotary hook

<Needle bar rise>

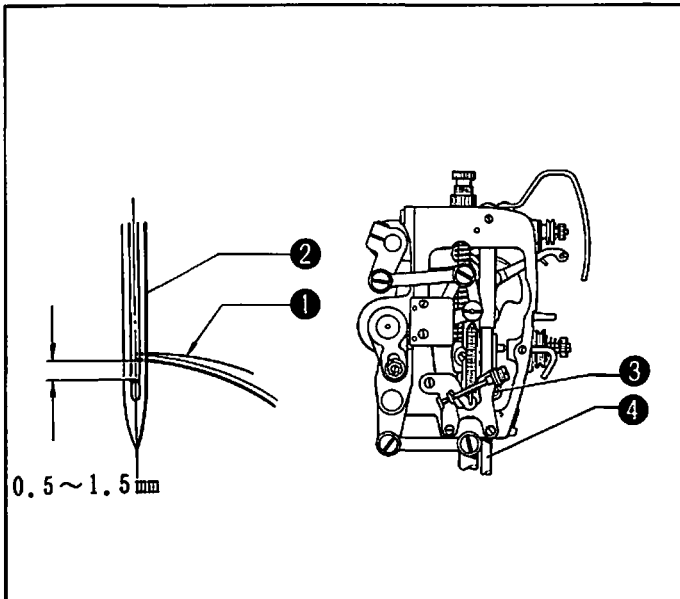


Rotate the pulley toward yourself and align the rotary hook point ① with needle center ② when the needle is raised 2.2 mm from its lowest position.

- Loosen the screw ③. Align the rotary hook point ① with the needle center ②.
- At this time, secure the rotary hook ① so that the gap between the rotary hook point ① and the needle ② is less than 0.1 mm.

NOTE : When using vinylon thread, see P.12.

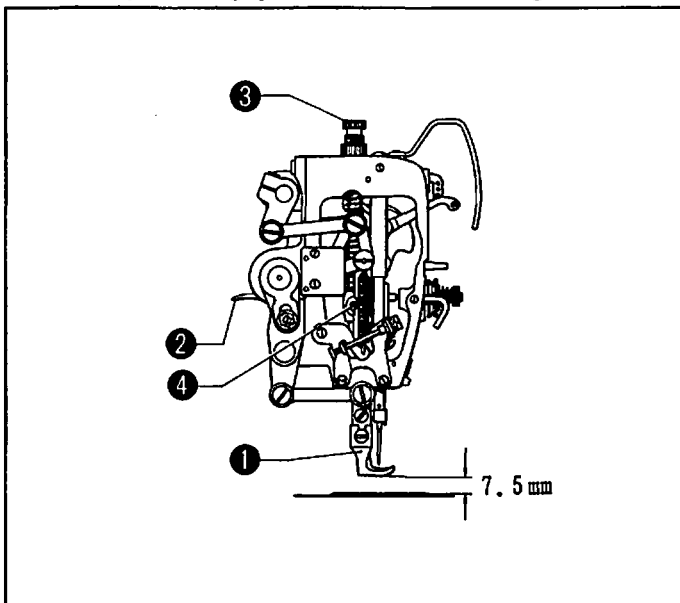
### < Needle bar height >



Adjust the gap between the top of the needle eye and rotary hook point ① to 0.5-1.5 mm when the rotary hook point ① is aligned with the needle center ②.

- Loosen the screw ③. Move the needle bar ④ up and down to adjust the gap.

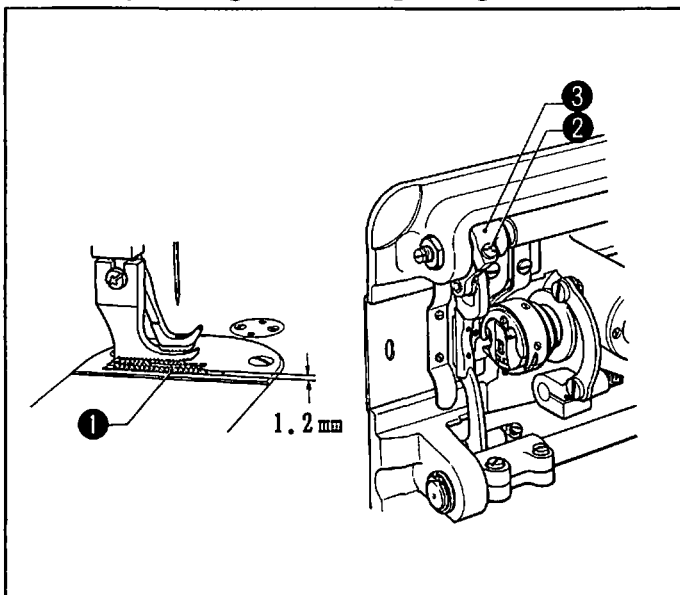
### ③ Adjusting presser foot height



The standard presser ① rise is 7.5 mm when it is raised using the presser foot lifter ②.

- 1) Loosen the presser adjusting screw ③ and raise the presser foot ① using the presser foot lifter ②.
- 2) Put a 7.5 mm gauge or something similar under the presser foot ①.
- 3) Loosen the screw ④ and move the presser foot ① up and down to adjust.

### ④ Adjusting feed dog height

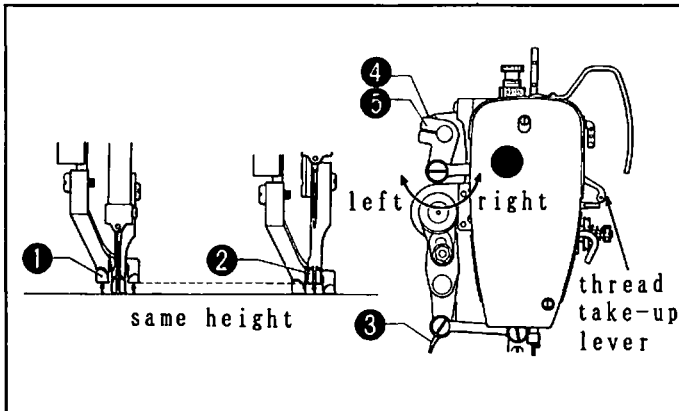


The standard feed dog ① height from the needle plate top surface is 1.2 mm when the stitch length is at its maximum.

- Loosen the screw ②. Move the feed lifting arm ③ up and down to adjust.

## 5 Adjusting feeding foot and presser foot

### <Alternative up and down movement of feeding and presser foot>

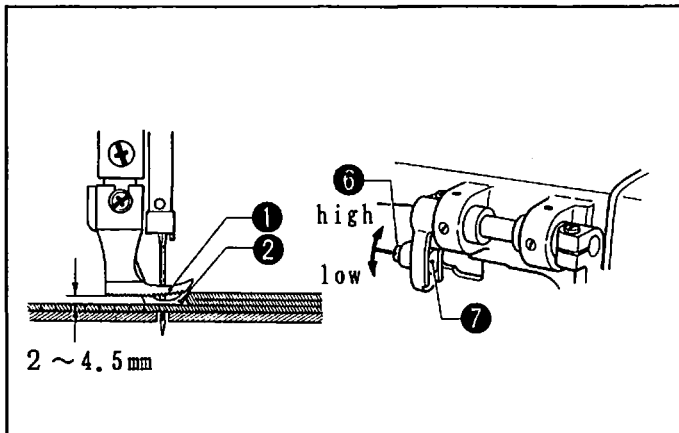


The feeding foot ① and presser foot ② move up and down alternately.

The feeding foot ① height position should be equal or slightly lower than the presser foot ② highest position.

- 1) Lower the presser foot lifter ③ while the thread take-up is at its highest position.
- 2) Loosen the screw ④. Move the upper feed lifting rock arm ⑤ right and left.  
When moved right ..... Presser foot rises even to the feeding foot.  
When moved left ..... Presser foot descends.

### <Feeding foot and presser foot height>

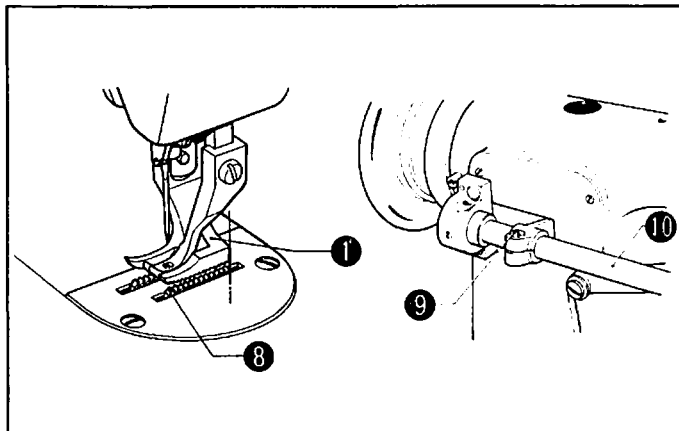


The standard height range is 2 - 4.5 mm.

- Loosen the nut ⑥ and adjust the heights appropriate to the material by moving the upper lifting feed connector shaft ⑦ up and down.

Maximum height ..... 4.5 mm  
Minimum height ..... 2 mm

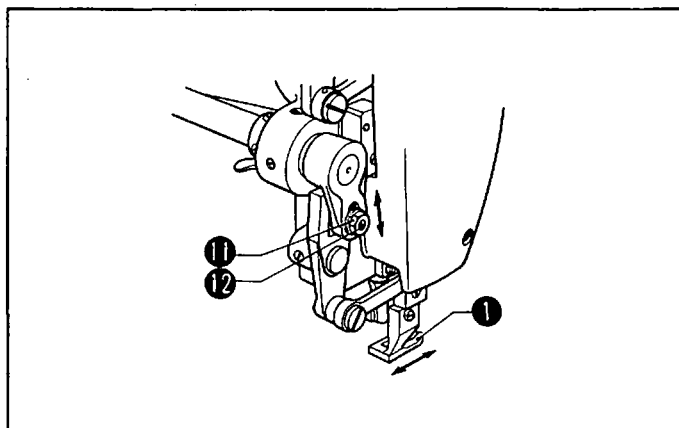
### <Adjusting feeding foot front and rear position>



The feeding foot ① end should be aligned with the feed dog ⑨ end.

- Loosen the screw ⑩. Turn the upper feed rock shaft assembly ⑩ to adjust.

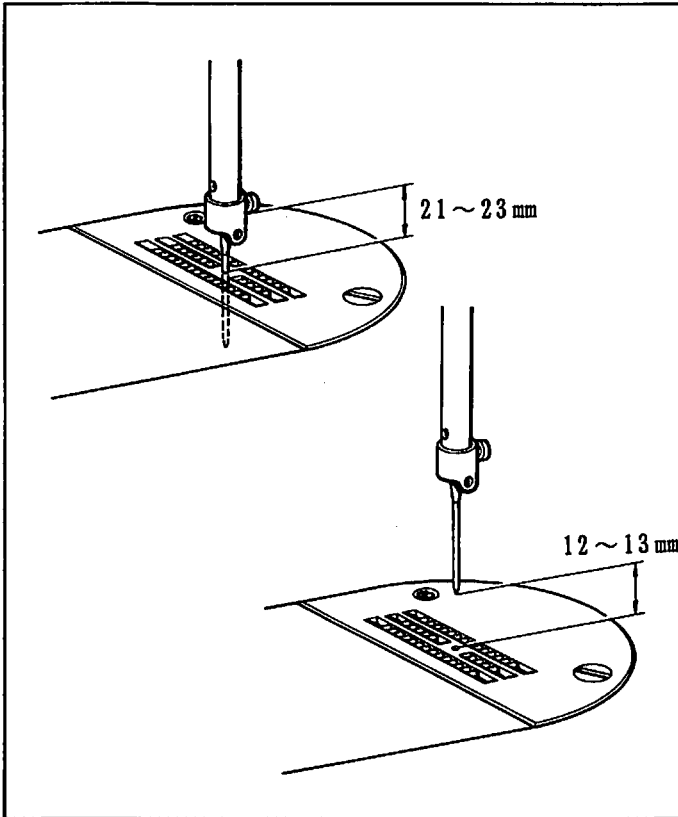
### <Adjusting feeding foot feed>



The feeding foot ⑩ feed should be equal to the feed dog ① feed.

- The feeding foot feed can be changed to suit conditions.
- Loosen the nut ⑪. Move the roller stud ⑫ up and down to adjust it.

## 6 Synchronizer (DB2-B798)

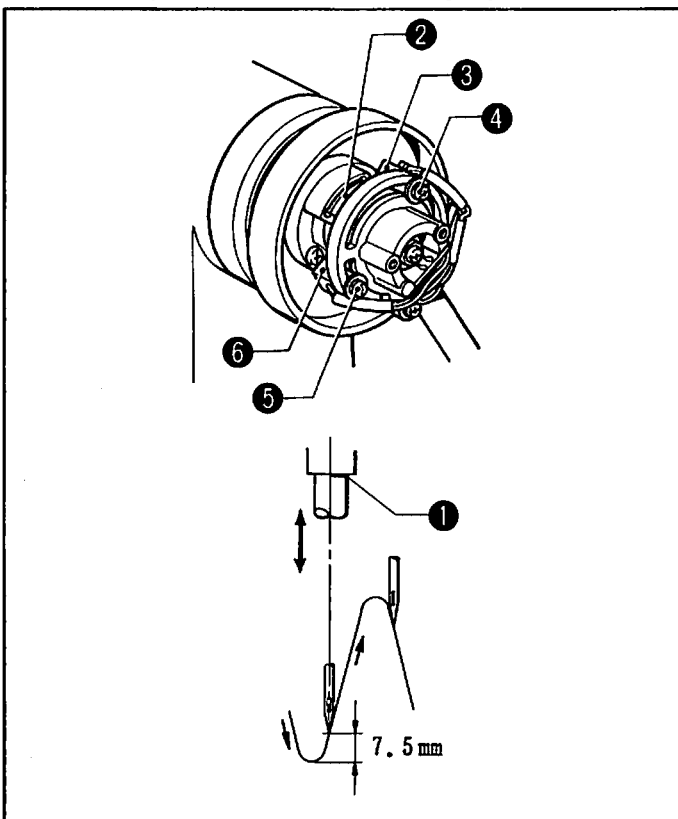


The synchronizer detects the needle with two hole ICs. Also, the synchronizer controls needle lowest position signal and thread trimming signal with one hole IC.

The distance between the needle plate top surface and screw bottom should be 21-23 mm when the needle is at its lowest position. Also, the distance between the needle plate top surface and the needle tip is 12-13 mm when the machine is stopped at the needle highest position.

Be sure to turn off the power when adjusting.

### <Adjusting needle thread trimming signal sensor position>



- 1) Turn the pulley in the direction of the operation to raise the needle bar ① 7.5 mm from its lowest position.
- 2) If the hole IC ③ is not aligned with the magnet ② bottom, loosen the screw ④ and move the hole IC ③ to adjust it.

NOTE: Move the hole IC ③ in the direction of the operation to raise the needle bar ① highest position.  
Move the hole IC ③ in the opposite direction to lower it.

### <Adjusting needle highest position>

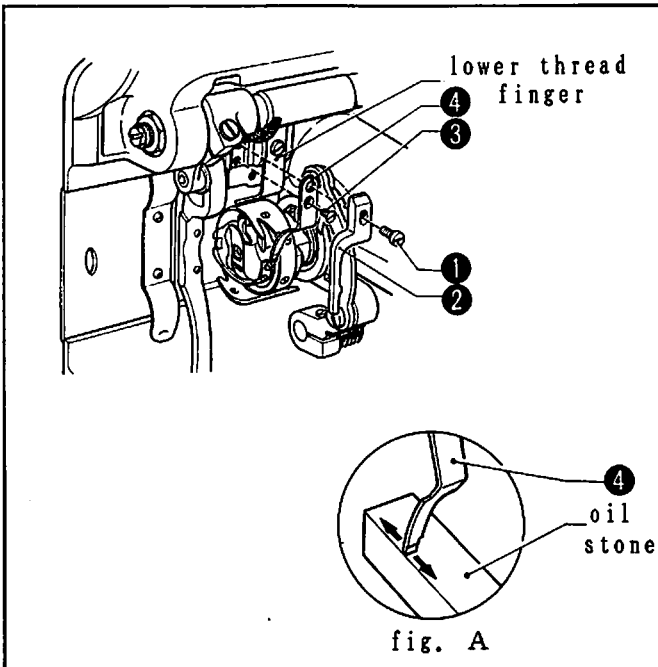
- Loosen the screw ⑤ to move the hole IC ⑥ and adjust it.

NOTE: Move the hole IC ⑥ in the direction of the operation to lower the needle bar ① highest position.  
Move the hole IC ⑥ in the opposite direction to raise it.

## 7 Replacing fixed and movable knives (DB2-B798)

Be sure to turn off the power when replacement.

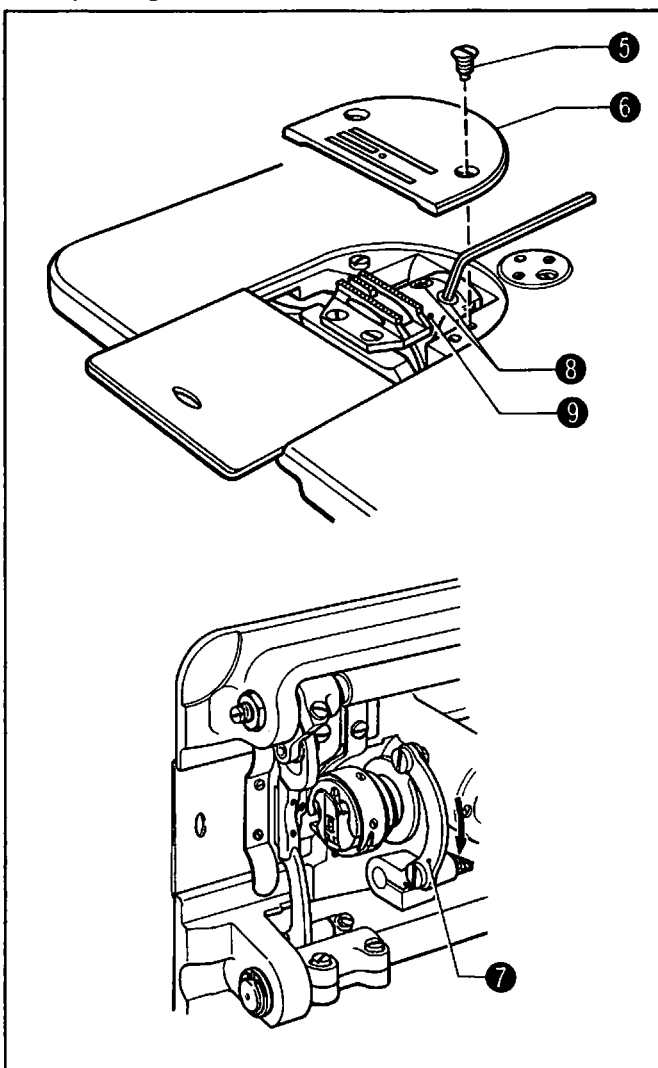
### <Replacing fixed knife>



- 1) Tilt the sewing machine head.
- 2) Remove the screw ①, and remove the bobbin case holder position bracket ②.
- 3) Remove the screw ③ then remove the fixed knife ④.

NOTE: If the fixed knife ④ has lost its sharpness, use an oil stone to sharpen it, as shown in Fig.A.

### <Replacing movable knife>



- 1) Raise the presser foot by using the presser foot lever.
- 2) Remove the screws ⑤ then remove the needle plate ⑥.
- 3) Turn the sewing machine pulley until the needle bar reached its highest position.
- 4) Press the thread cutter connecting rod ⑦ manually in the direction of the arrow until position at which the screws ⑧ can be seen is reached then stop.
- 5) Remove the screws ⑧ and then remove the movable knife ⑨.

NOTE: When removing the needle plate ⑥ and the movable knife ⑨, be sure to first remove the needle.

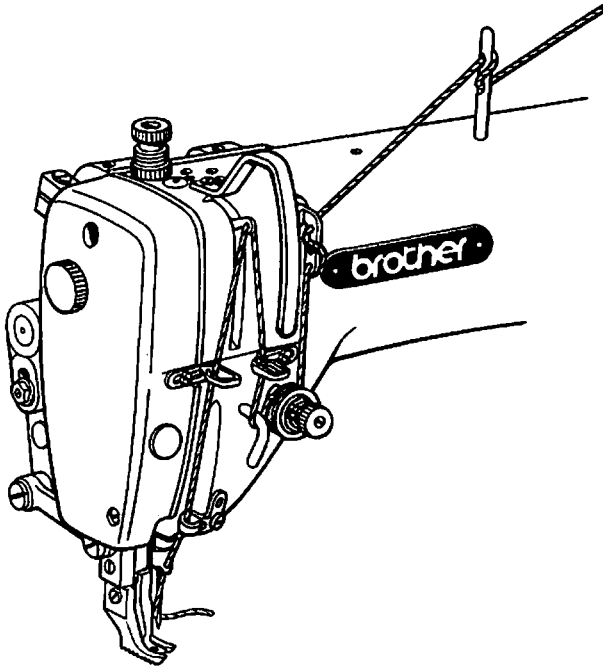
NOTE: Reassembly can be performed by simply reversing the above procedure.

## OTHER

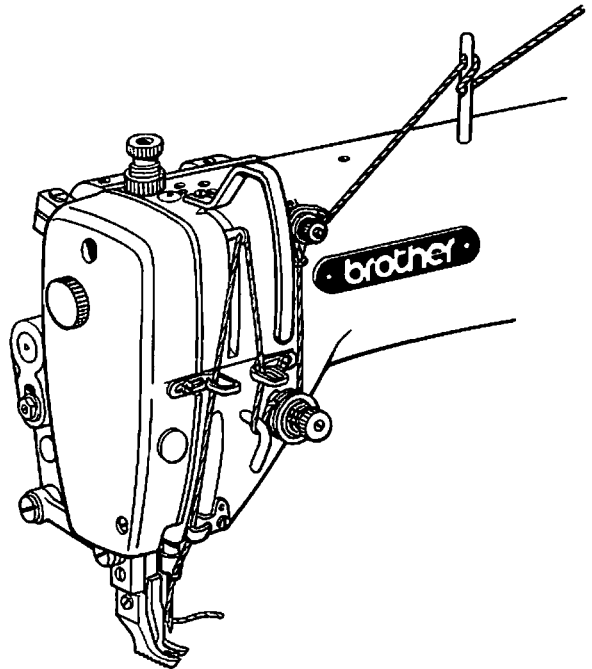
### 1 Sewing with synthetic thread

When sewing with synthetic thread, thread as in the figure below.

[DB2 - B797]

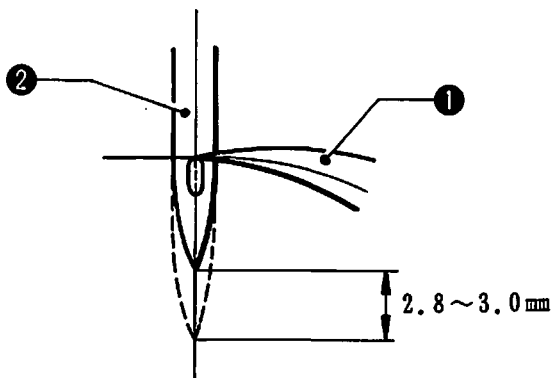


[DB2 - B798]



### 2 Sewing with vinylon thread

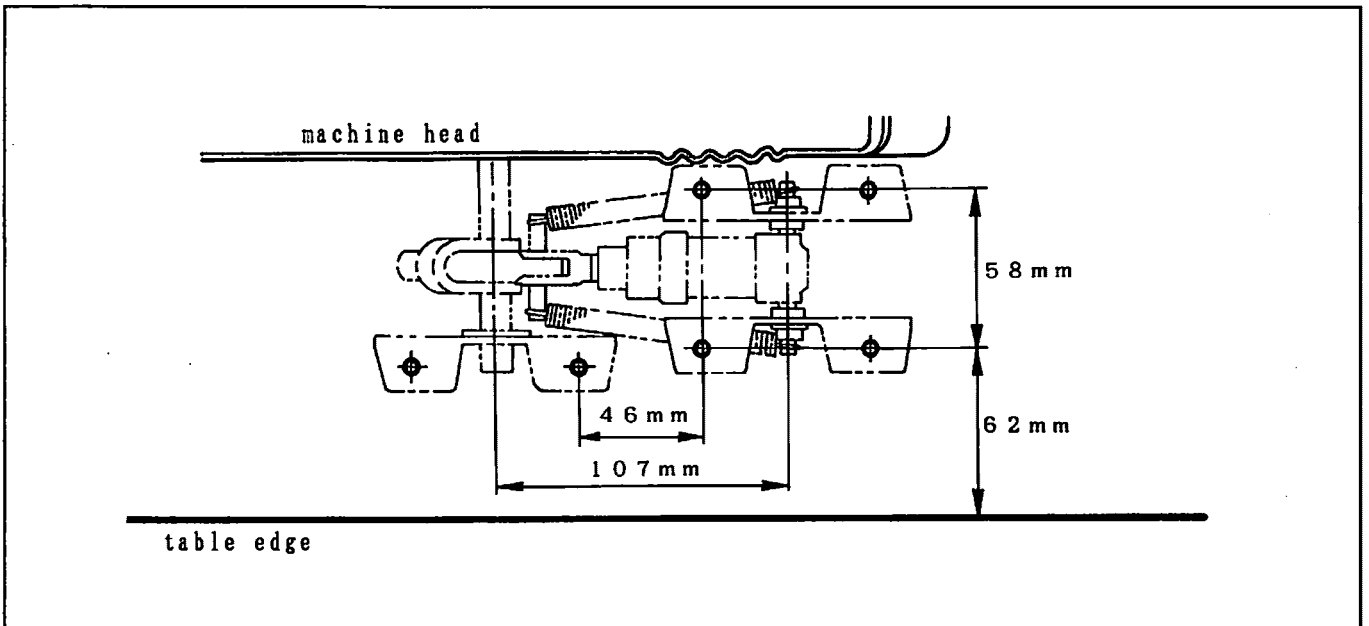
When sewing with vinylon thread, turn the machine pulley towards you so that the rotary hook point ① is aligned with the center of the needle ② when the needle is raised 2.8 - 3.0 mm above its lowest position.



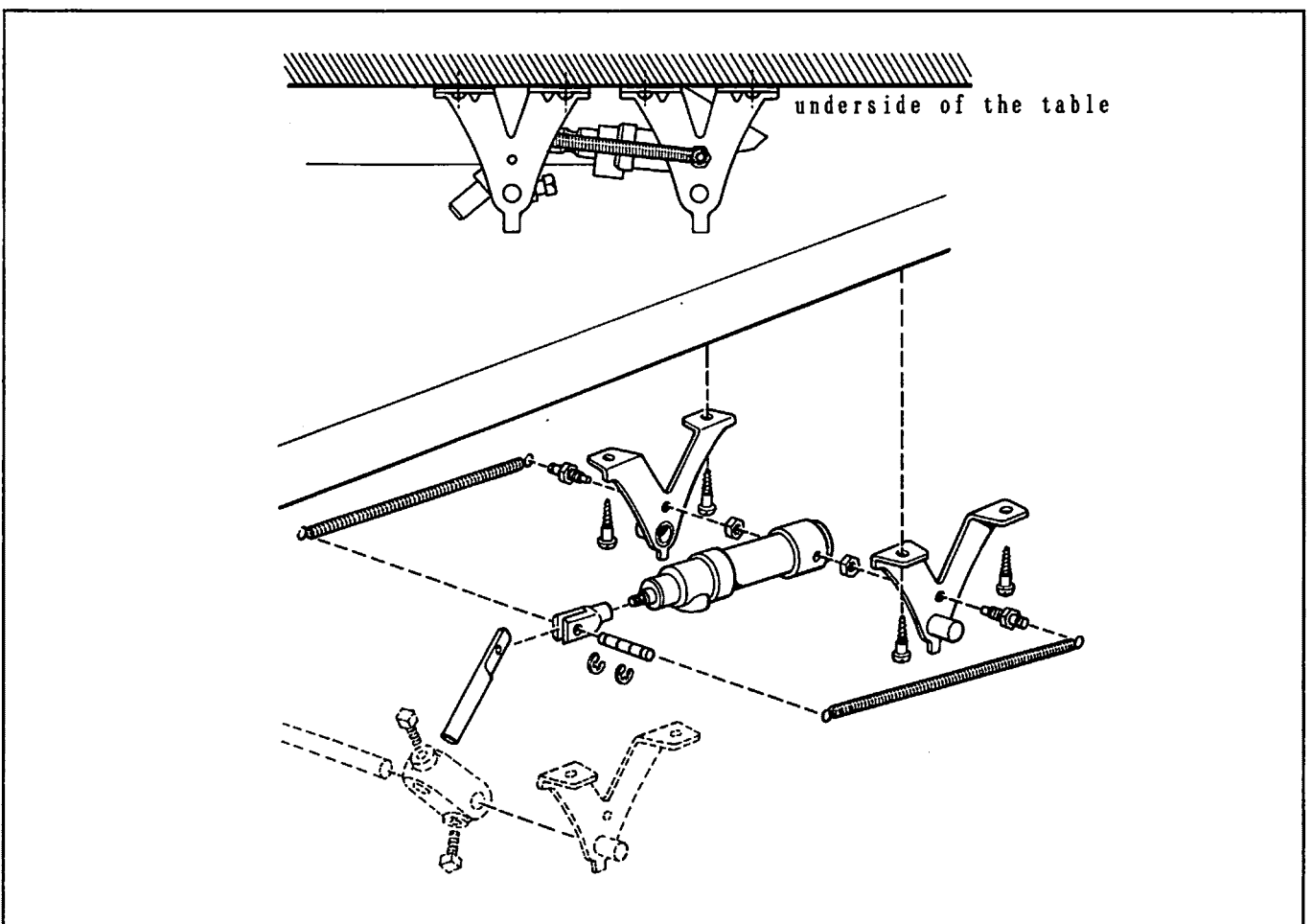
### ③ Attaching presser foot lifter set

Attach the presser foot lifter set to the underside of the table as shown in the figure below.

<Measurements, top view>

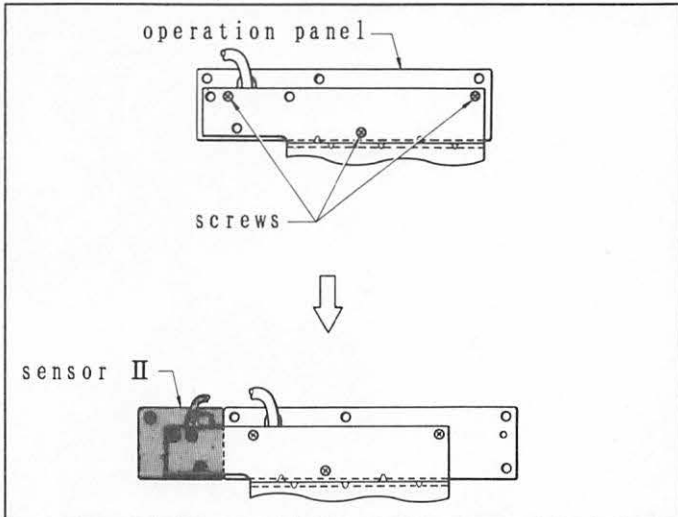


<The underside of the table>

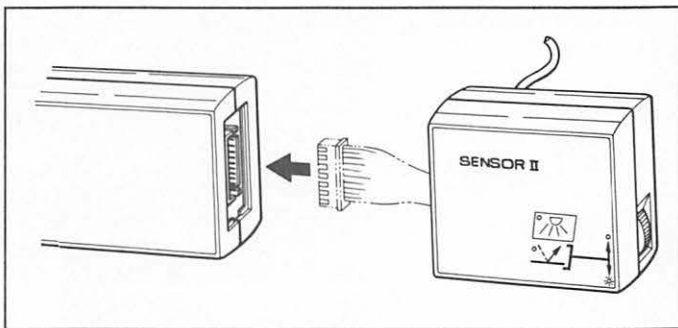


#### 4 Attaching material end sensor

※Make sure the power is off when attaching the material end sensor.

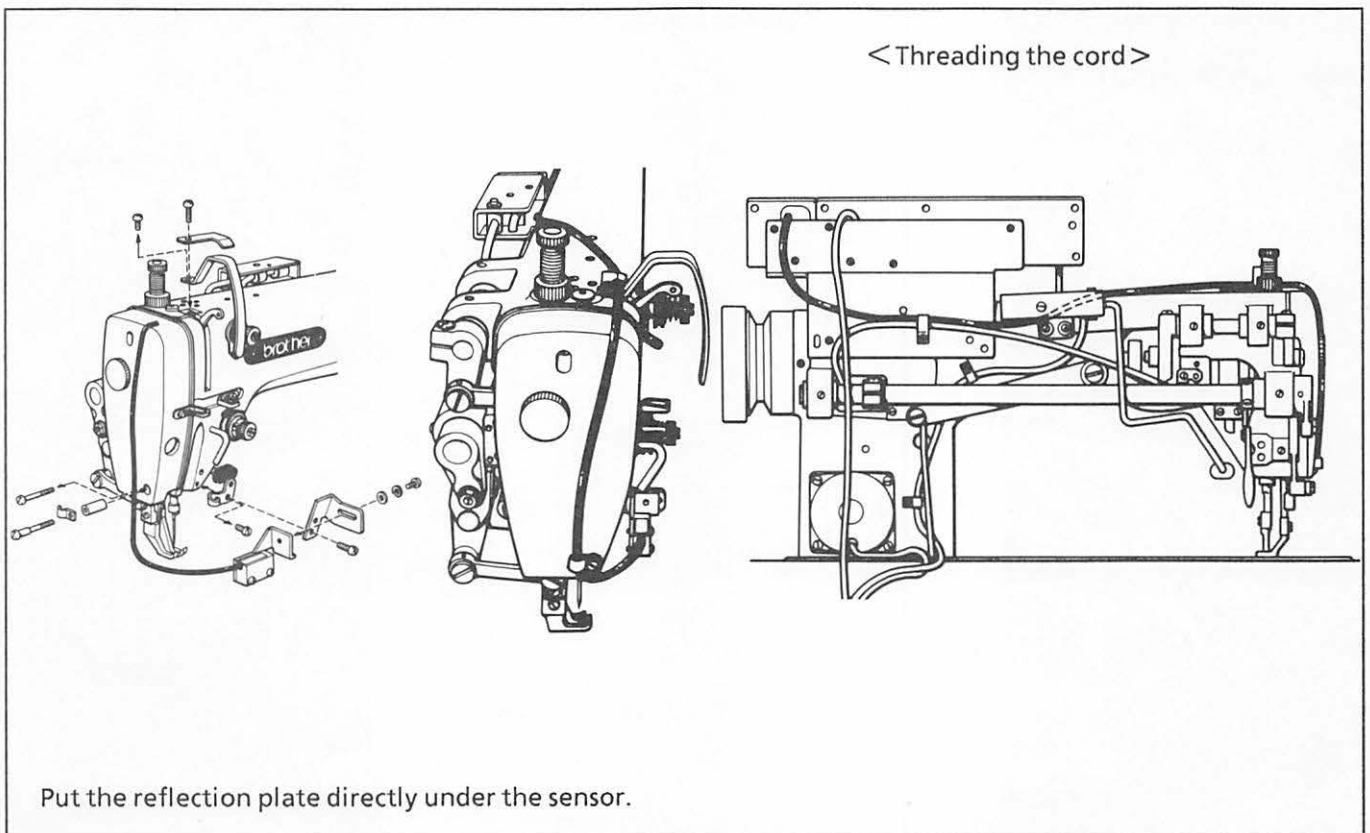


- 1) Change the position of the operation panel as shown in the figure on the left.



- 2) Remove the rubber cap on the side of the operation panel.  
Plug the connector of the sensor into the panel.

- 3) Be careful not to catch the flat cable of the connector and attach the sensor II with the two screws.





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