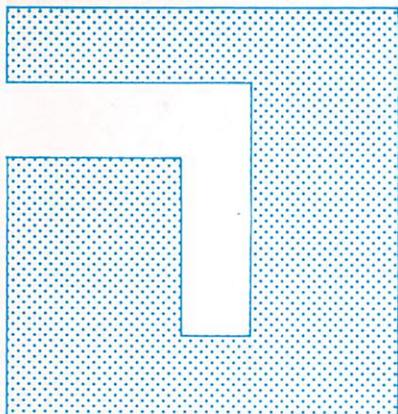
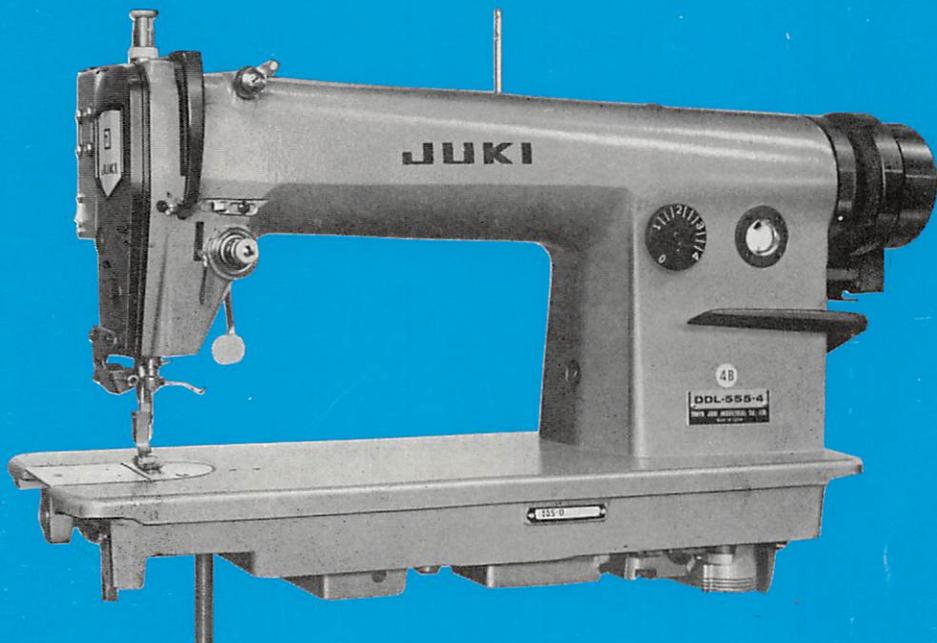


BE5554T0B0A



- Model DDL-555-4  
High Speed Single Needle Lockstitch  
Industrial Sewing Machine Equipped with  
Automatic Thread Trimmer
- Model DLN-415-4  
High Speed Single Needle Feed  
Lockstitch Industrial Sewing Machine  
Equipped with Automatic Thread Trimmer
- Model DLU-450-4  
High Speed Single Needle Top and Bottom  
Feed Industrial Sewing Machine Equipped  
with Automatic Thread Trimmer
- Model DLD-432-4  
High Speed Single Needle Differential  
Feed Lockstitch Industrial Sewing Machine  
with Automatic Thread Trimmer

# INSTRUCTION BOOK



This INSTRUCTION BOOK is compiled for JUKI models DDL-555-4, DLN-415-4, DLU-450-4 and DDL-432-4 which are equipped with the automatic thread trimmers to their mother models like DDL-555, DLN-415, DLU-450 and DLD-432. Since the basic principle of operation and adjustment are entirely same as those of mother models, please refer to the separate INSTRUCTION BOOK prepared for them as well.

Please do not hesitate to contact with our agent in your area or our main business for further questions or details.

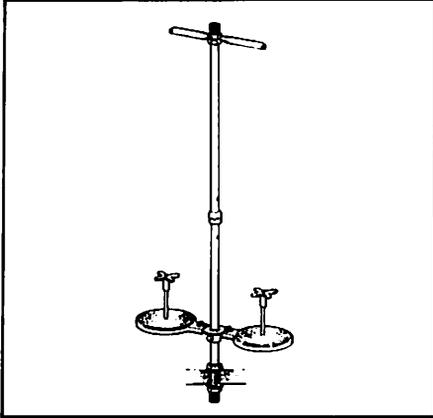
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# I. SETTING UP THE MACHINE

## 1. Installation of the machine head

Not only the machine head but also the oil reservoir and the bobbin winder are installed on the table in the same way as that of the general lockstitch machines. Please refer to the separate Instruction Book for model DDL-555, DLN-415, DLU-450 or DLD-432.



Set up the spool stand on the machine table by making use of the installation hole as shown in the illustration. Do not tighten the lock nut too much, or the laminated surface of the table top will be cracked.

## 2. Motor pulley and belt

The maximum sewing speed of the DDL-555-4 and, DLN-415-4 is 5,000 s.p.m. and DLU-450-4 and DLD-432-4 is 4,200 s.p.m.

You must use the M-type V-belt.

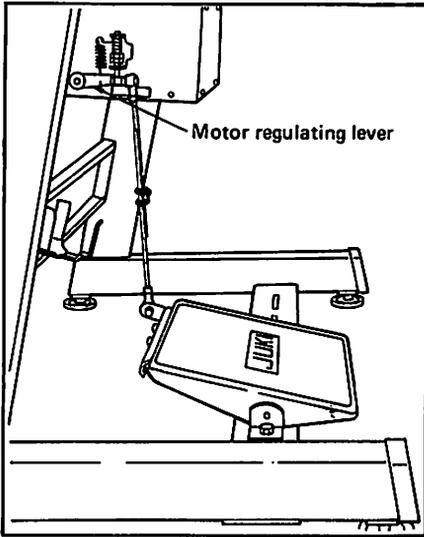
The under mentioned table indicates the maximum sewing speeds related to the motor pulleys and the length of belts. The effective diameter of the motor pulley is obtained by deducting 5mm(13/64") from the outer diameter.

Outer diameter of motor pulley	Motor pulley Part No.	Sewing speed		Belt length	Belt Part No.
		50 Hz	60 Hz		
125mm	MTS-P01200A0	5,060 s.p.m.		43"	MTJ-VM004300
115	MTS-P01100A0	4,630		42"	MTJ-VM004200
105	MTS-P01000A0	4,250	5,040 s.p.m.		
100	MTS-P00950A0	4,000			
95	MTS-P00900A0	3,820	4,540		
90	MTS-P00850A0	3,610	4,320		
85	MTS-P00800A0	3,390	4,000	41"	MTJ-VM004100
80	MTS-P00750A0	3,160	3,790		
75	MTS-P00700A0		3,520		

(Note) The center hole on the motor pulley is tapered, and the normal pulleys commercially available in the market can not be used for these machines.

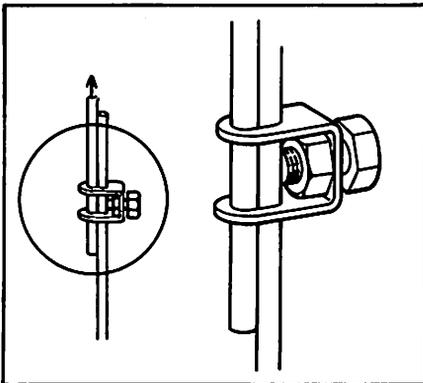
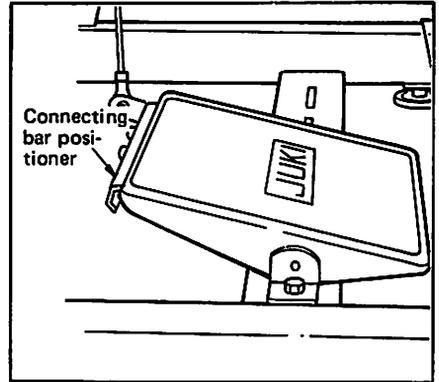
If the belt is too long, the connecting rod may not work smoothly.

### 3. Installing and adjusting the pedal



#### 1) How to attach the connecting bar

After the motor regulating lever and the pedal were connected by means of the connecting bar, adjust the vertical position of the connecting bar by sliding the connecting bar positioner.



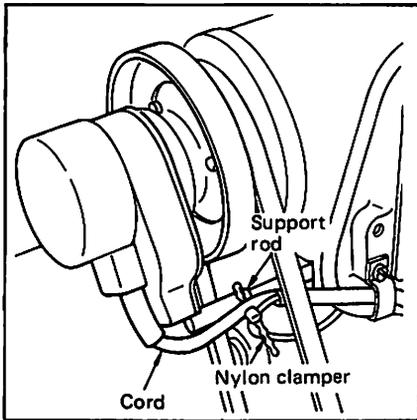
#### 2) How to adjust the pedal angle

You can adjust the pedal angle by changing the effective length of the connecting bar. Loosen the clamp screw and change the effective length of the connecting bar.

#### 4. Installing the synchronizer

The necessary instruction for installation is indicated on the packing case on both of "MATSUSHITA" and "HITACHI" motors.

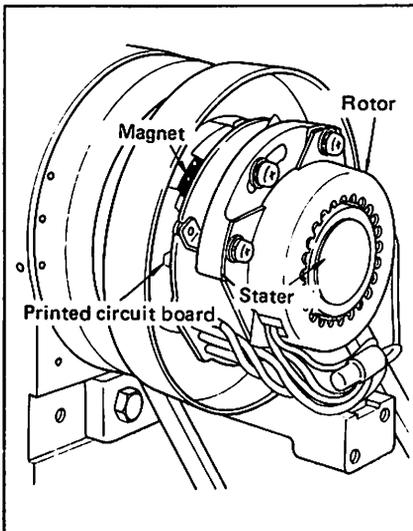
#### (CAUTIONS)



#### "MATSUSHITA" motors

Screw the support rod into the threaded hole located on the right looking from the hand-wheel side and fix it with a lock nut.

Fix the cord onto the support rod by means of the nylon clasper so that it does not contact with the V-belt.



#### "HITACHI" motors

Be careful not to allow the rotor and the stator to contact with each other.

The clearance between the printed circuit board cover and the rotor magnet is 1 to 2mm. Pass the cord through the inside of the synchronizer cover and fix it with the cord clamp so that it does not contact with the V-belt.

## 5. Connecting the cords

Before starting to connect the cords, make sure that the power source is cutout. Connect each cord with care not to let it touch the motor pulley, V-belt or any other moving parts.

While you are connecting each plug, make sure that the plug is firmly secured in the receptacle by trying to pull it lightly.

(1) is the power supply cord.

(2) is the cord for the magnetic clutch brake which is pre-connected with 4-pole connector (HITACHI) or 3-pole connector (MATSUSHITA).

(3) is the cord for controlling the knee lifter (2-pole connector). Only for AK-2.

(4) is the cord to the selector switch for controlling the count-back stitching (with 3-pole plug for HITACHI, 6-pole plug for MATSUSHITA).

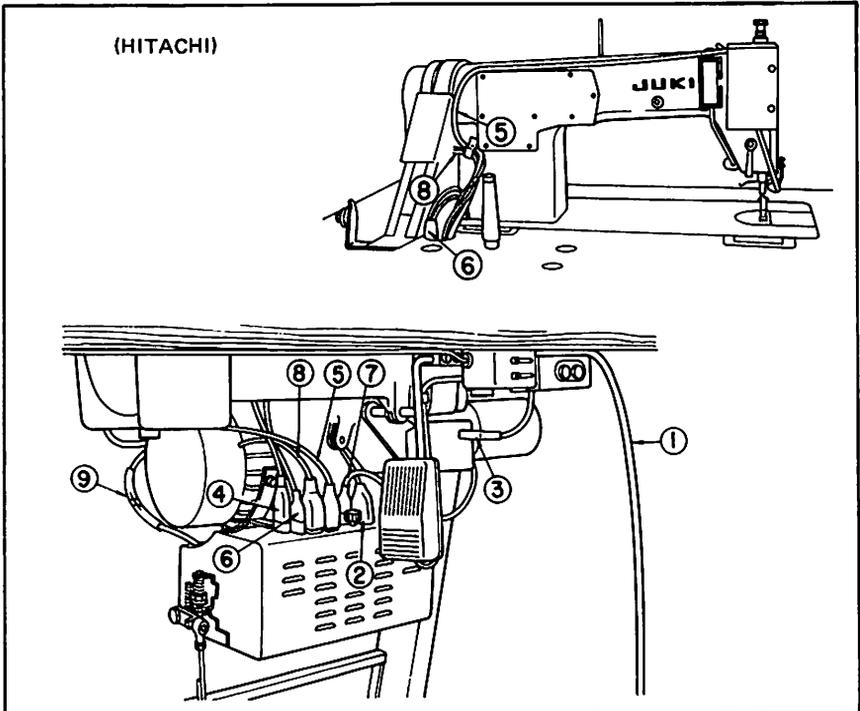
(5) is the cord to the wiper and the control lever for switch-back stitching (with 6-pole connector). Pass the cord through the opposite side of the motor pulley via the hook beneath the table and plug in.

(6) is the cord for driving the thread trimmer solenoid and the automatic reverse feed solenoid. (with 4-pole connector).

(7) is the cord to drive the solenoid for the automatic lifter (with 4-pole connector). Only for AK-2.

(8) is the cord to the synchronizer. (with 12-pole connector for HITACHI and 8-pole connector for MATSUSHITA).

(9) is the pre-connected cord to the controller. (3-pole connector).





## II. HOW TO OPERATE THE MACHINE

### 1. General instruction

After the machine has been set up, bring down the needle by rotating the handwheel with your hand, switch on the machine on trial and check that the motor rotates in the correct direction by watching the rotation of the handwheel. The handwheel must rotate counterclockwise watching from the open side of the handwheel.

If you fail to judge it, you can repeat to switch on and off the machine until the direction is found.

- Clean up the installed machine.
- Before starting to operate the machine, read through the separate INSTRUCTION BOOK of DDL-555, DLN-415, DLU-450 or DLD-432.
- Do not drive the machine before the oil reservoir is filled with the lubricating oil.
- Do not replace the motor pulley with a larger one within first 1 month. You may operate the machine at a higher speed depending on the necessity of sewing works and operator's ability after the first 1 month has passed.
- Keep away from the needle dropping place when you switch the machine on.
- Do not fail to switch off the machine before you tilt the machine head backwards for lubrication or clearing or removing the V-belt. (If you mistakenly tread on the pedal, the motor pulley will be stopped immediately by means of the built-in safety device in the case of "HITACHI" motor assembly.)
- When you move the machine to other places, do not hold it with the cover located on the rear of the handwheel.
- Even if you tread on the pedal backwards (heel-down) immediately after the machine is switched on or the thread is trimmed, the needle would not come down or the thread trimmer would not work. Such thread trimming motion is performed only after the pedal has been trod once forwards (toe-down).

### 2. Lubrication and amount of oil

Before starting to operate the machine, fill the oil reservoir up to the "HIGH" marked level with JUKI industrial lubricating oil. Refer to the corresponding paragraph in the separate INSTRUCTION BOOK.

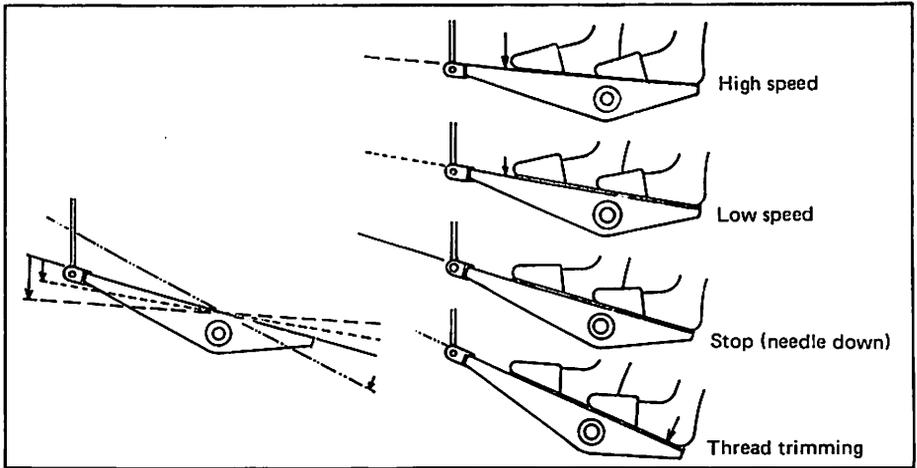
### 3. Checking the pedal action

- Firstly, check your machine without passing the threads.
- Switch on the machine, and the needle will be held at its highest position without fail. Even the needle staying at a lower position will be brought up and held at the highest position by switching on the machine.
- When you switch on the machine, do not put your hand under the needle.

### 4. How to operate the pedal

As the following illustration shows, the pedal of this model is operated in 4 stages.

- (1) Place your feet gently on the pedal at the stop position.  
(The needle is held at the lowest position).
- (2) Tread on the pedal lightly forwards (toe-down), and the machine starts to rotate at a low speed.
- (3) Tread on the pedal further forwards (toe-down), and the machine will increase its speed gradually and attain the maximum speed when it has been trod down fully. However, when the switch for the counter-back stitching is turned on, the machine will attain its maximum sewing speed only after the count-back stitch has been formed, even though you tread on the pedal fully.



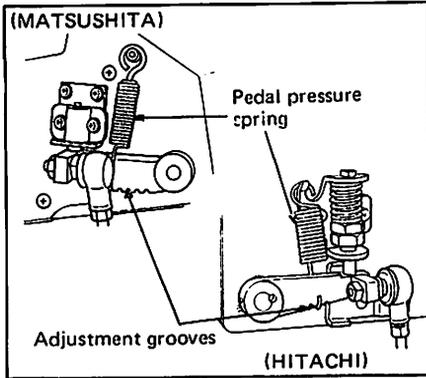
- You can obtain the normal performance of thread trimming by treading on the pedal backwards (heel-down) directly from the high or low speed position.
- You can tread back the pedal to the neutral position immediately after the machine has started to perform the thread trimming action. The thread trimming action is automatically completed and you do not need to keep the pedal at the thread trimming position any longer.
- When the machine stops, the needle will be held at the lower position.
- When you want to bring up the needle, tread on the pedal fully backwards (heel-down) once. Then, the machine will perform a thread trimming action and will bring up the needle and hold at its highest position.

**(Note)**

In some cases, the machine with "MATSUSHITA" motor, does not start to run immediately after a thread trimming action was made even though the pedal is trod forwards (toe-down). This is simply because the machine is locked by the safety device built in the motor assembly. In such a case, tread on the pedal back to the neutral position once and tread on it again forwards to drive the machine.

In the case of the machine with "HITACHI" motor, such safety device is automatically released after a thread trimming action has been completed.

## 5. Adjusting the pedal pressure and stroke



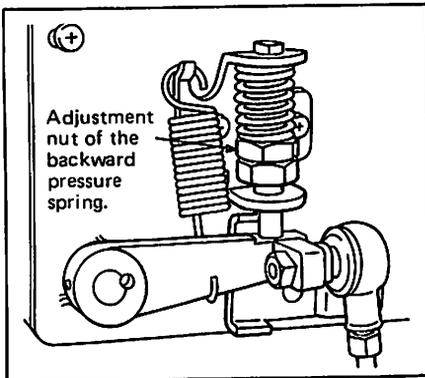
- 1) Adjustment of the forward pressure  
Adjust the forward pressure by changing the position of the spring.

“HITACHI” motor:

The pressure is reduced by moving the spring to the left and is increased to the right.

“MATSUSHITA” motor:

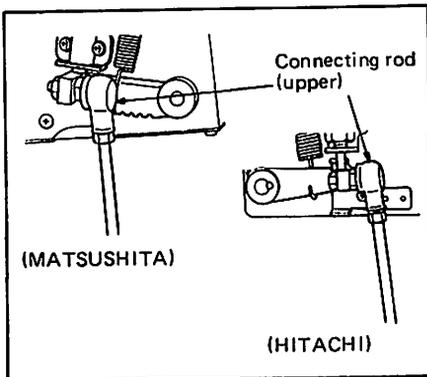
The pressure is reduced by moving the spring to the right and is increased to the left.



- 2) Adjustment of the backward pressure

“HITACHI” motor:

The backward pressure can be adjusted by means of the adjustment nut of the backward pressure spring. The pressure is increased by tightening the spring and reduced by loosening.



- 3) Adjustment of the pedal stroke

The pedal stroke can be adjusted by changing the connection of the upper connecting rod with the motor regulating lever.

“HITACHI” motor:

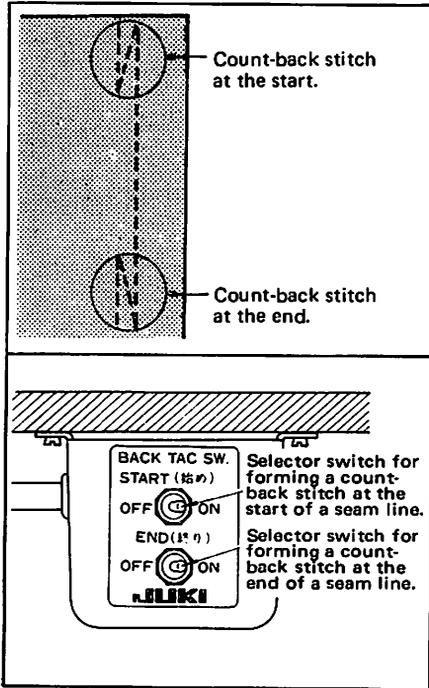
The stroke is reduced by connecting the rod with the left hand side of the lever and increased by the right hand side.

“MATSUSHITA” motor:

The stroke is reduced by connecting the rod with the right hand side of the lever and is increased by the left hand side.

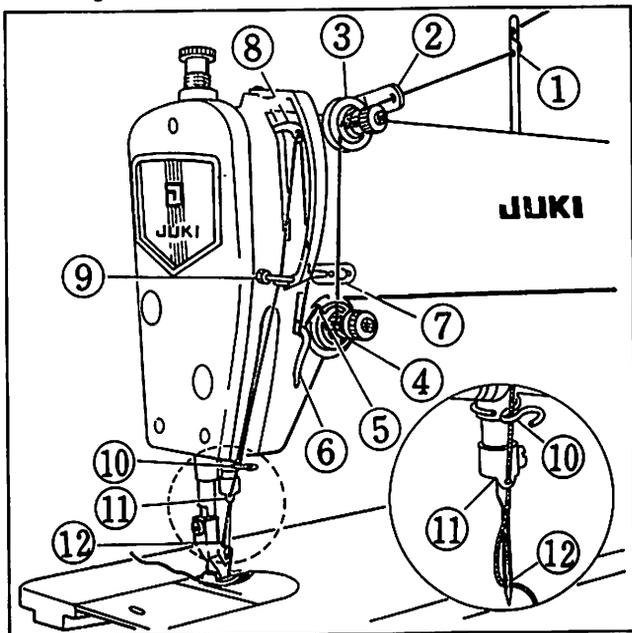
## 6. Automatic count-back stitching

You can form the count-back stitches at the start and/or the end of a seam line automatically without operation of the feed control lever or switch-back lever.



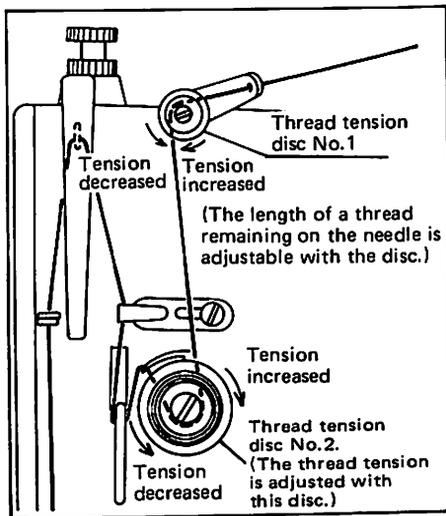
- 1) You can preset the machine to form the count-back stitches at the start and/or the end of the seam line by means of the selector switches.
- 2) If the number of count-back stitch is not enough for your sewing purpose, turn off the selector switch and produce the necessary length of reverse stitches manually by making use of the reverse feed control lever or the switch-back lever.
- 3) When the selector switch for "Start" is turned on, you can let the machine to automatically trim off the thread immediately by treading on the pedal backwards before or after forming the count-back stitch at the start of a seam line. Even though you tread on the pedal for thread trimming while the count-back stitch is being formed, the thread trimming action will not be performed prior to the formation of the said count-back stitch.
- 4) When the selector switch for "End" is turned on, the thread trimming action will be performed after the count-back stitch has been formed at the end of a seam line. If you tread on the pedal for thread trimming while the machine is forming a count-back stitch at the end of a seam line, the machine will trim off the thread after completing the said count-back stitch.

## 7. Passing the needle thread



- If the machine stops leaving the needle at a lower position, tread on the pedal backwards for performing an idle thread trimming before passing the needle thread. Then, the needle will go up and stay at the highest position.
- Pass the needle thread in the order from ① to ⑫ as shown in the illustration.

## 8. Adjusting the thread tension



Refer to the INSTRUCTION BOOK separately prepared for the model DDL-555, DLN-415, DLU-450 or DLD-432 for the method of thread tension adjustment excepting the following points;

- 1) Adjustment of the thread tension spring.  
If the thread tension spring of your machine which is threaded with a thin cotton or synthetic fiber thread like Tetoron or Nylon thread has an excessive tension or stroke, it may produce some skipped stitched at the end of a seam line and accordingly the thread may not be trimmed off normally.

**2) Adjustment of the thread tension disc No.1**

- ○ The length of a thread remaining on the needle is shortened by increasing the tension of the disc No.1 and is lengthened by decreasing the said tension.
- When you use a thin thread (like a synthetic thread), reduce the tension properly. On the other hand, when you use a thick thread, increase the tension.

**3) Adjustment of the thread tension disc No.2**

- The method of adjustment is same as that of normal lockstitch sewing machines.
- If you reduce the tension too much, it may cause a thread breakage at the start of sewing.

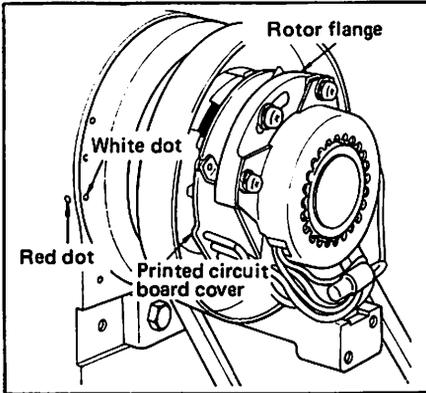
**9. Adjusting the length of thread remaining on the needle after trimming**

- The length of the thread remaining on the needle after the thread trimmer has worked is closely related with the correct formation of stitches at the start of a seam line. You can judge it from a floated needle thread or bobbin thread at the start of a seam line.
- You can adjust the length of remaining thread by means of the thread tension disc No. 1.
- It is possible to change the timing of the thread trimming between the cotton and synthetic threads, if necessary. Please consult it with our agent or our main business office.

## 10. Adjusting the needle stop position after thread trimming

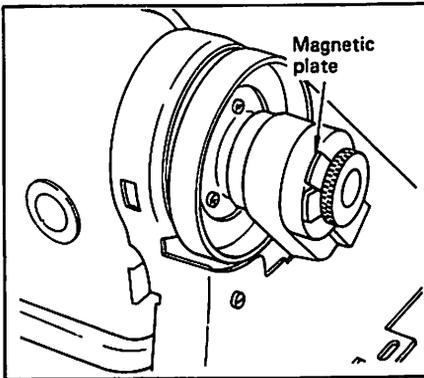
You can adjust the position at which the needle stops after a thread trimming has been completed.

The standard needle stop position is shown by the coincidence of the white dot marked on the hand wheel with the red dot on the machine arm. This adjustment can be made by changing the installation angle of the sensing element of the synchroniser component. Refer to the separate Instruction Book prepared for the motor assembly for the details of adjustment.



### “HITACHI” motor:

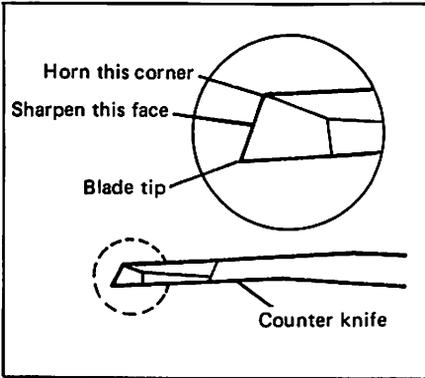
Remove the cover from the synchronizer component and adjust the installation angle of the printed circuit board within the adjustable range of the oval holes on the rotor flange.



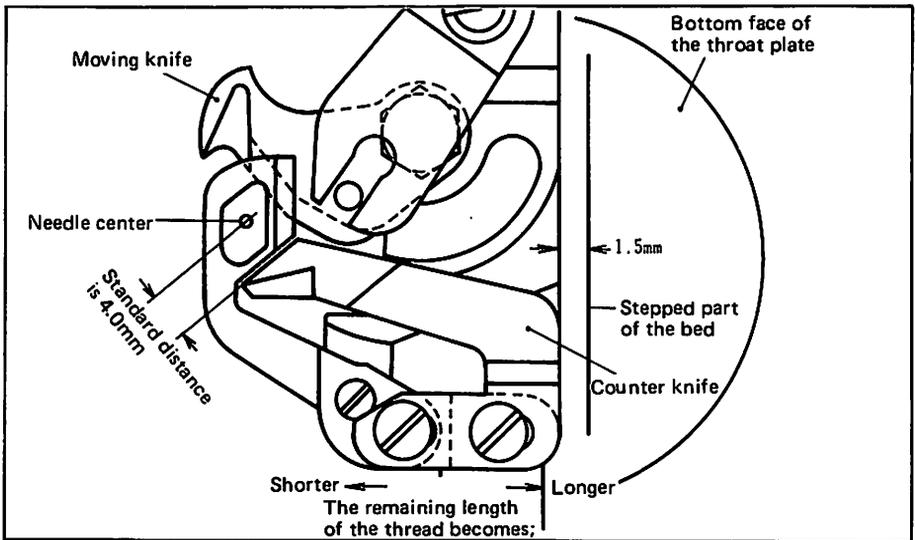
### “MATSUSHITA” motor:

Remove the cover from the synchronizer and adjust the installation angle of the magnetic plate.

## 11. Sharpening the counter knife



- As soon as you noticed that the thread trimmer has become dull, sharpen the counter knife immediately.
- Put the resharpened counter knife back to its correct position shown by the following illustration.
- If you move the installing position of the counter knife to the right from the standard position, the length of thread remaining on the needle after trimming becomes longer and vice versa.

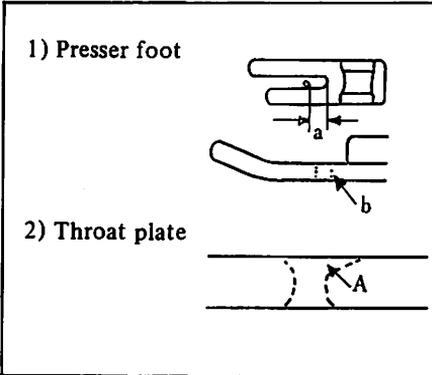


\*Do not re-sharpen the moving knife.

## 12. Important notes

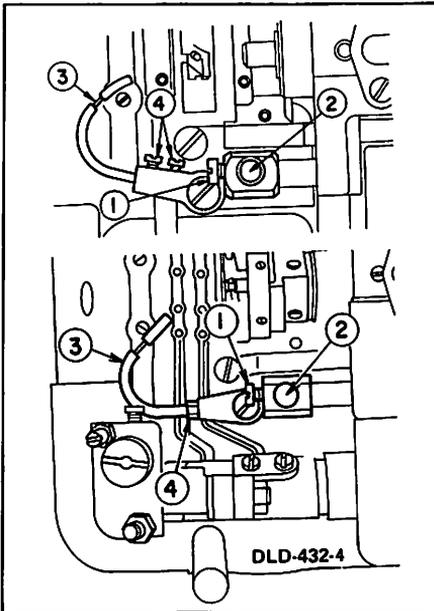
- Allow the thread spool to supply thread to the machine freely.  
(If not, the length of the remaining thread on the needle after thread trimming may be too short to stay on the needle.)
- If skipped stitches are produced, the thread trimmer may trim only the bobbin thread.  
In such a case, adjust the timing of the needle and the shuttle race in order to remove such skipping stitches.

### 13. How to select the presser foot, throat plate, sewing hook and feed dog



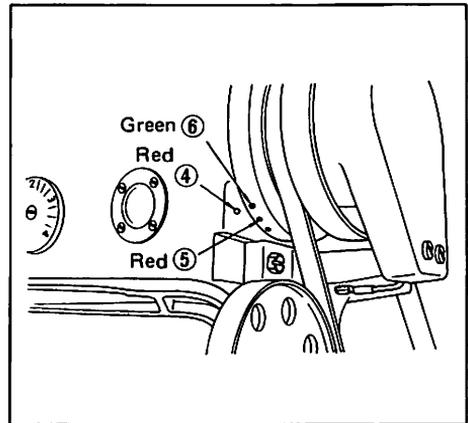
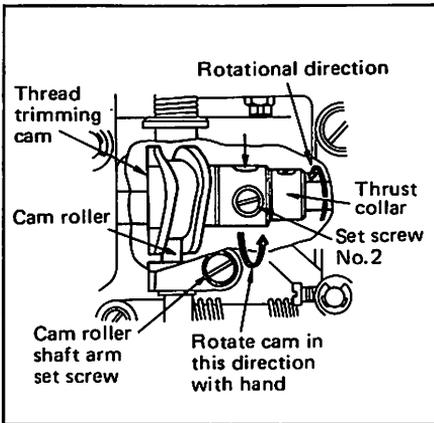
- 1) Presser foot: Select small a and b parts.
- 2) Throat plate: Select small needle eye and A part.
- 3) Needle: Finer needle for less thread slippage.
- 4) Sewing hook: Automatic lubricating hook with a groove.
- 5) Feed dog: If a feed dog which is commonly used is adopted, there is no problem, but if an extremely thick feed dog is used, the backside of the dog teeth might be scratched when the moving knife moves fully.

### 14. Adjusting the timing of the thread trimming cam



- 1) How to judge the correct timing of the trimming cam

In order to change the length of the thread remaining at the needle eye after trimming, adjust the timing of the thread trimming cam. This can be done easily by matching the arm with the indicated line on the hand wheel, according to the kind of thread used—cotton or synthetic thread. Tilt the machine, turn the hand wheel with your hand until the thread take-up comes just before the upper dead point and if the sewing hook presser ③ is pushed deeply to right, the cam roller will enter the cam groove of the cam and will be interlocked there. In that condition, rotate the hand wheel in the reverse direction than the conventional way, and the hand wheel will come to a point where it will not rotate any more. At this point if cam timing is matched so that the indicated line of the arm ④ and the indicated line of the hand wheel ⑤ are matched together as shown in the fig., it becomes a cotton thread timing. But if the indicating line ④ is matched with the indicating line ⑥, it becomes a timing for synthetic thread.

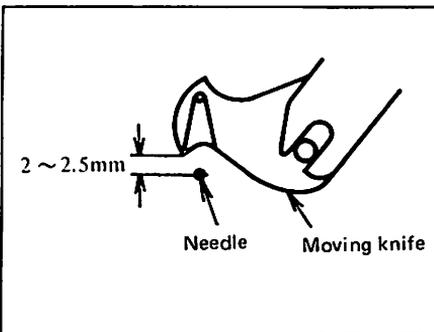


2) How to match the timing of the thread trimming cam

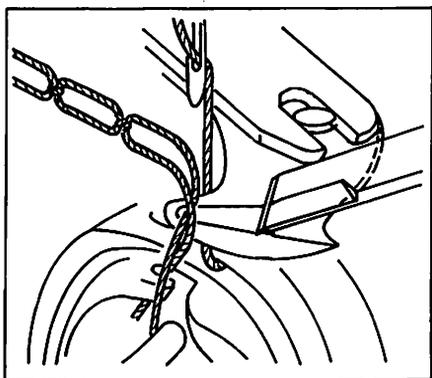
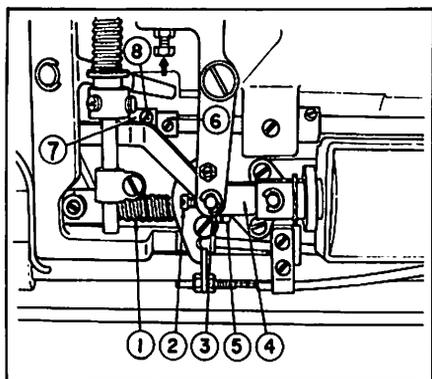
First, loosen the 2 set screws of the trimming cam in order from set screw No.1 and No.2, and match the indicating line of the arm with the indicating line of the hand wheel. (For cotton thread, match red color ④ with the red color ⑤ and for synthetic thread, red color ④ with the green color ⑥).

Then, by pushing the sewing hook presser ③ to right, interlock the cam and the cam roller, and without rotating the hook shaft, rotate the cam only toward the reverse direction than the normal hook shaft rotational direction with your finger tips. At the position where the cam does not rotate any more, push the cam against the thread trimming cam thrust collar and finally tighten the cam set screws in the order of No.2 and No.1.

15. Adjusting the position of the moving knife



- 1) The correct position of the moving knife when it has moved to its maximum range is, as shown in fig., when the tip of the moving knife has retreated to 2~2.5mm (1/6~3/32") from the center of the needle. When the retreated range is less than this position, it cannot scoop up the needle or bobbin thread at the trimming instant, while if it's too much, the feed dog and the moving knife might hit each other. Therefore, it is very important to match the position of the moving knife correctly.



2) How to match the position of the moving knife.

This is adjusted by changing the right or left position of the moving knife shaft ① when the machine stops. By this adjustment, the interlocking of the cam and the cam roller also changes, so match the position of the thread trimming cam toward the shaft direction, also.

- a. First, loosen the magnet set screw ② and pull out the magnet link pin ③.
- b. Move the magnet link ④ downwards and adjust the screwed-in amount of the knife moving shaft adjusting nut ⑤. If this nut is screwed in deep, the retreating range of the knife becomes greater and if it's loosened, the range gets less.
- c. Loosen both set screws of trimming cam ⑦ and the thrust collar ⑥.
- d. Match the indicating line of the hand wheel with the indicating line of the arm.

(In case of cotton thread, match ④ with ⑤ of the front fig. and for synthetic thread, match ④ with ⑥).

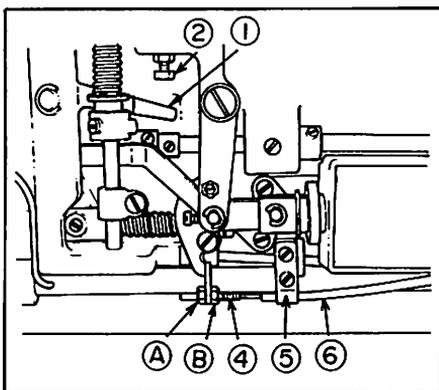
- e. Rotate the set screw No.2 ⑧ (indicated point) of the trimming cam so that it comes to front and when it comes to front, push the sewing hook presser to right.
- f. Move the cam to right and left and interlock the cam and the cam roller.
- g. With this condition, as you pull the cam to right, move it toward the arrow direction until the cam cannot rotate anymore.
- h. Temporarily tighten the set screw No.2 ⑧ of the cam.
- i. Tighten the lock nut ⑤.
- j. At this point, verify the following:
  - ① Is the indicating line of the pulley matched?
  - ② Is the roller inserted smoothly into the cam groove?
  - ③ Is the retreated range of the moving knife 2~2.5mm?
- k. Tighten the two set screws of the cam securely.

- l. Push the thrust collar against the cam and tighten the two set screws.
- m. Attach the magnet link pin in its original position.

The simple method to judge the correct position of the moving knife would be to verify if the step part of the bed and the forked base of the knife are parallel to each other. If they are parallel, the position is correct.

- (Note)
- 1) No matter how slight the right or left position adjustment may be, it has a big bearing on the retreating range of the moving knife.
  - 2) Verify if the moving knife disposes the thread properly as shown in fig.

## 16. The floating range of the second thread tension disc



- 1) How to verify the floating range  
At the position where the take-up has come just before the upper dead point, lower the presser foot and when the hook thread presser is pushed hard to right, verify that the floating range of the second thread tension disc is 0.5~1mm.
- 2) Adjusting the floating range of the second thread tension disc.
  - ① To increase the floating range, loosen nut B and tighten nut A.
  - ② To decrease the floating range, loosen nut A and tighten nut B.
 After the adjustment is completed, tighten both A and B nuts.

## 17. Changing the moving knife

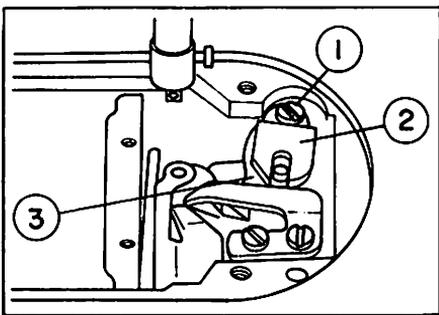
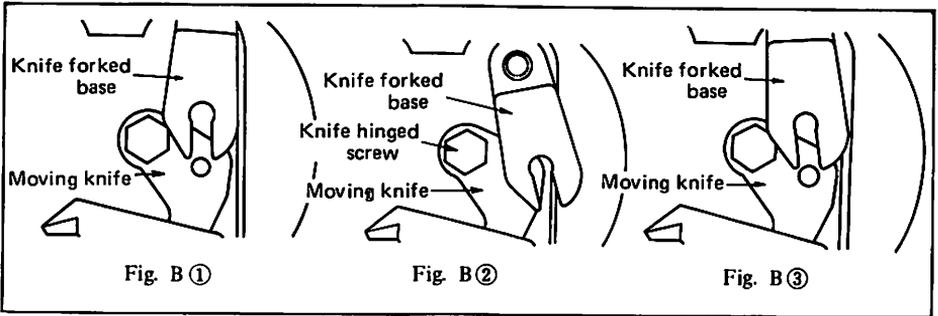


Fig. A

To change the moving knife, do as follows:

- 1) Loosen the knife forked base pin set screw (Fig.C ①) and pull out the knife forked base pin (Fig.C ②).
- 2) Remove the moving knife hinge screw (Fig.A ①), move the knife forked base (Fig.A ②) and the moving knife (Fig.A ③) to the position shown in Fig.B ① and remove the pin of the moving knife from the knife forked base.
- 3) Move the knife forked base to the position shown in Fig.B ② and remove the knife hinged screw (Fig.B ②). For this purpose, use the special spanner in the accessories box.

For installing back, reverse the above procedure. After the knife hinged screw is tightened, move the moving knife with your hand and see if it moves smoothly without any rattling. Match the knife forked base to the position shown in Fig.B ③ and firmly insert the knife forked base pin into the forked base. (If the knife moving shaft is moved to right or left, the pin will go in deep into the base). When the shaft is moved to right, be sure to see that the knife moves to right, also.



### 18. Adjusting the bobbin thread presser

If the bobbin thread presser (Fig.C ③ ) is penetrating too deep toward the bobbin case at the trimming time, the bobbin will not rotate and the bobbin thread will be trimmed too short, causing thread slippage at the start of sewing.

On the contrary, if it is not inserted deep enough, the needle thread will slip out from the tip of the bobbin thread presser at the trimming time, shortening the thread remaining amount at the tip of the needle eye after the trimming and invites thread slipping out.

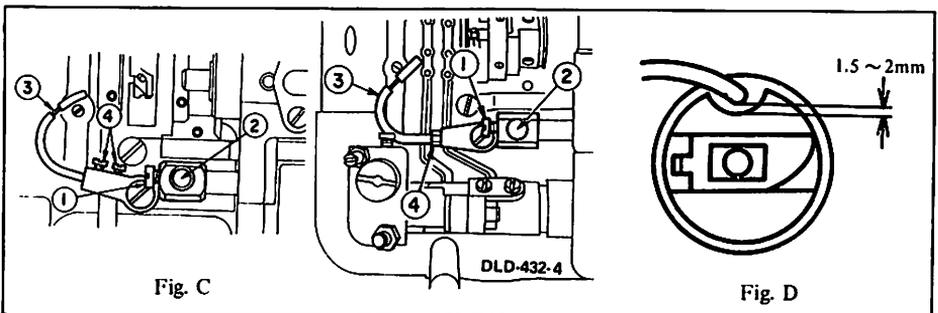
#### 1) The correct position of the bobbin thread presser

When the thread trimming lever is pressed hard against the stopper side, the bobbin thread should be pulled out easily. At this position, the clearance between the tip (Bobbin presser) of the bobbin thread presser and the upper carved part of the bobbin should be 1.5~2mm as shown in Fig.D.

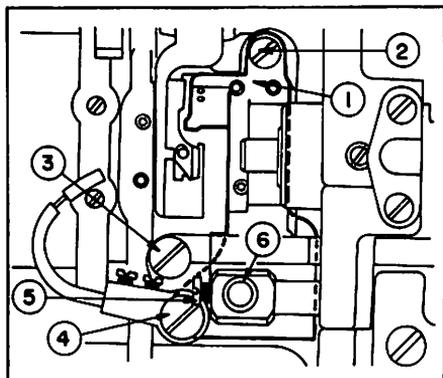
#### 2) How to adjust the bobbin thread presser

Loosen the screws (Fig.C ④ ), and adjust by moving the bobbin thread presser in and out or up and down. At this instant, adjust the fore and aft position of the bobbin thread presser and adjust the position of the thread trimming stopper arm as shown in the figure.

After adjusting, tighten the set screw of the stopper. Be sure to verify that the tip of the roller shaft is not contacting the bottom of the cam groove when the stopper is deeply inserted. If it's contacting, refer to the chapter on "Adjusting the slide shaft" and re-adjust the position of the slide shaft collar.



## 19. Adjusting the slide shaft



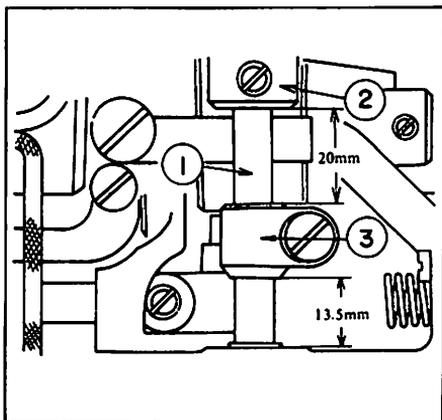
The moving range of the slide shaft ① is 5.4mm(7/32"). This is adjusted by moving the slide collar ② toward the shaft direction. Also, the position of the cam roller shaft arm ③ should be 13.5mm(33/64") as shown in fig.

\* The adjusting procedure is as follows:

- ① Determine the position of the thread trimming arm stopper depending upon the position of the hook thread presser.
- ② Adjust the position of the slide collar so that the moving range of the slide shaft comes to 5.5mm(7/32").
- ③ Adjust the position of the thread trimmer magnet (DC solenoid).

When the thread trimming arm has moved to the position where it is almost touching the stopper, adjust the position of the thread trimming magnet so that the snap ring which is attached to the thread trimming magnet plunger hits the rubber ring and stops and also when the magnet is pulling, there should be no clearance between the two ends of the rubber ring.

## 20. How to install and remove the knife installing base



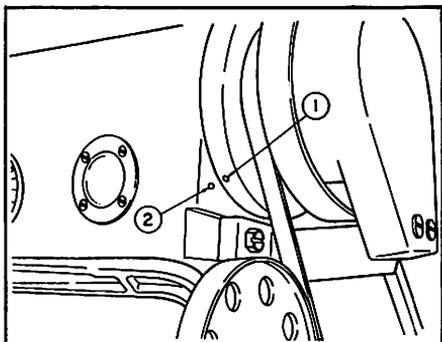
To remove the knife installing base ① do as follows in order:

- 1) Take out the sewing hook.
- 2) Loosen the knife forked base ⑤ and pull out the knife forked base pin ⑥.
- 3) After removing the hook thread presser link hinged screw ③, and if the hook presser hinged screw 4 knife installing base set screw ② is pulled out, the knife installing base will come off. To install back, reverse this order.

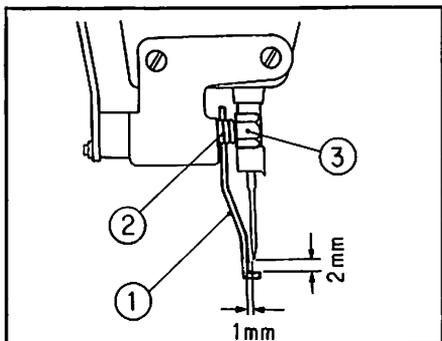
### III. HOW TO ADJUST THE WIPER

#### 1. Adjusting the position of the wiper

You must adjust the position of the wiper according to the thickness of the material to be sewn in the following way;

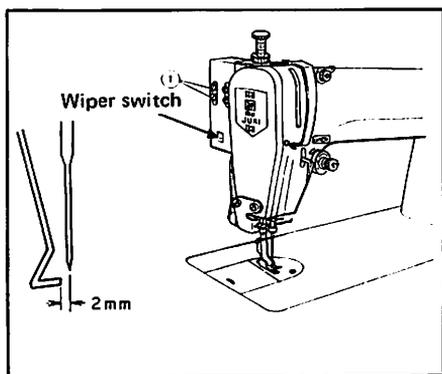


- 1) Rotate the handwheel manually in the normal direction so that the white dot ① on the handwheel coincides with the red dot ② on the frame.



- 2) Insert the wiper ① into the wiper driving shaft ② so that the vertical clearance between the wiper edge and the needle point becomes 2mm and also the parallel clearance between the needle center and the straight inside face of the wiper becomes 1mm. Fix the wiper at such a position by tightening the lock nut ③.

#### 2. Adjust the position of the wiper magnet



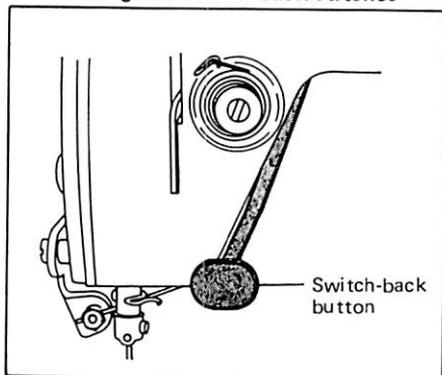
Pull the plunger fully into the coil, loosen the screw ① which is clamping the wiper magnet and adjust the position of the wiper magnet so that the wiper tip is positioned with a clearance of 2mm from the center line of the needle.

After a correct position has been obtained, fix the wiper magnet at that position by tightening the screw.

When you do not use the wiper, turn off the wiper switch.

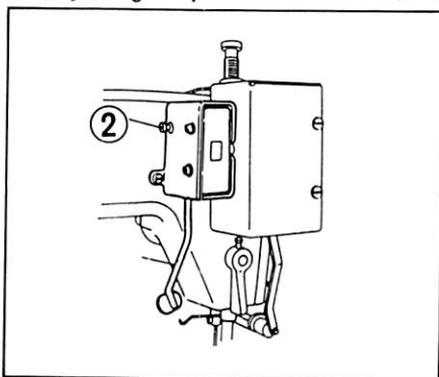
## IV. HOW TO USE AND ADJUST THE SWITCH-BACK BUTTON

### 1. Forming the switch-back stitches



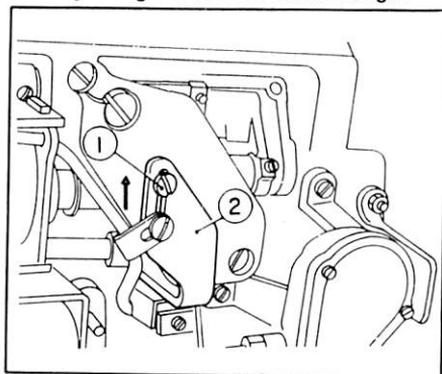
- 1) Push the switch-back button, and the machine will perform a reverse feed to form the switch back stitches.
- 2) As long as the button is kept pressed, the machine will perform the reverse feed.
- 3) As soon as the button is released, the machine will reverse to the normal feed.
- 4) When you sew the half stitches, use the reverse feed control lever.

### 2. Adjusting the position of the switch-back lever



You may change the position of the switch-back button to a suitable height for your operation. Loosen the screw ②, move the switch lever up and down and obtain a suitable height. Tighten the screw firmly after adjustment.

### 3. Adjusting the reverse stitch length



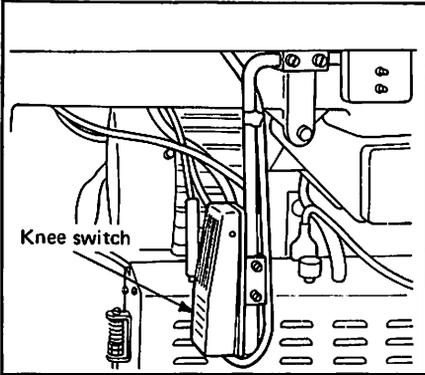
An excessive length of reverse stitch is usually formed by the operator until he gets used to operate this new device.

In such a case, it would be advisable to shorten the seam line with the reverse feed by decreasing the stitch length of reverse feed in comparison with the stitch length with the normal feed, if it is permissible. To lessen the length of the reverse stitch, loosen the screw ① and push up the stopper plate ②. If you push it down to the bottom end, the stitch lengths of the normal and reverse feeds are identical.

## V. AUTOMATIC PRESSER FOOT LIFTER, AK-2 (Optional attachment)

The automatic presser foot lifter AK-2 is an optional attachment which is capable of lifting the presser foot and holding it at the highest position for 10 to 15 seconds after thread trimming has been made. A special motor is used for this lifter AK-2.

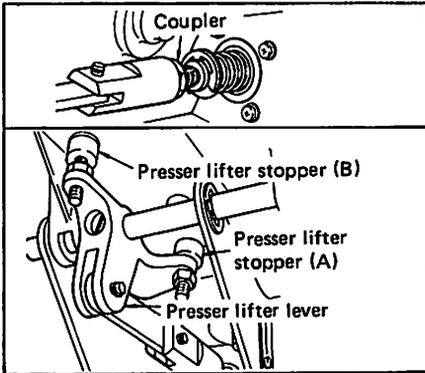
### 1. How to operate AK-2



If you want to raise the presser foot during a sewing work, press the knee switch. Such raised presser foot will be coming down immediately after the knee switch is released.

If you want to bring down the presser foot which has been raised as the result of an automatic run, tread on the pedal forwards (toe-down) or push and release the knee switch.

### 2. Adjusting the presser lifter stroke



1. Loosen the lock nut of the coupler.
2. Lower the presser foot stopper (A) fully by loosening the lock nut.
3. Push the knee switch to drive the solenoid.
4. You can adjust the stroke of the presser foot by rotating the plunger on the far side of the solenoid; the stroke is increased by a clockwise turn and is decreased by a counterclockwise turn.  
(The maximum stroke performed by the presser foot is about 8mm(5/16").)
5. Raise stopper (A) until it hits the oil reservoir by activating the solenoid.
6. Raise the stopper (A) by rotating it another half turn after releasing the knee switch.

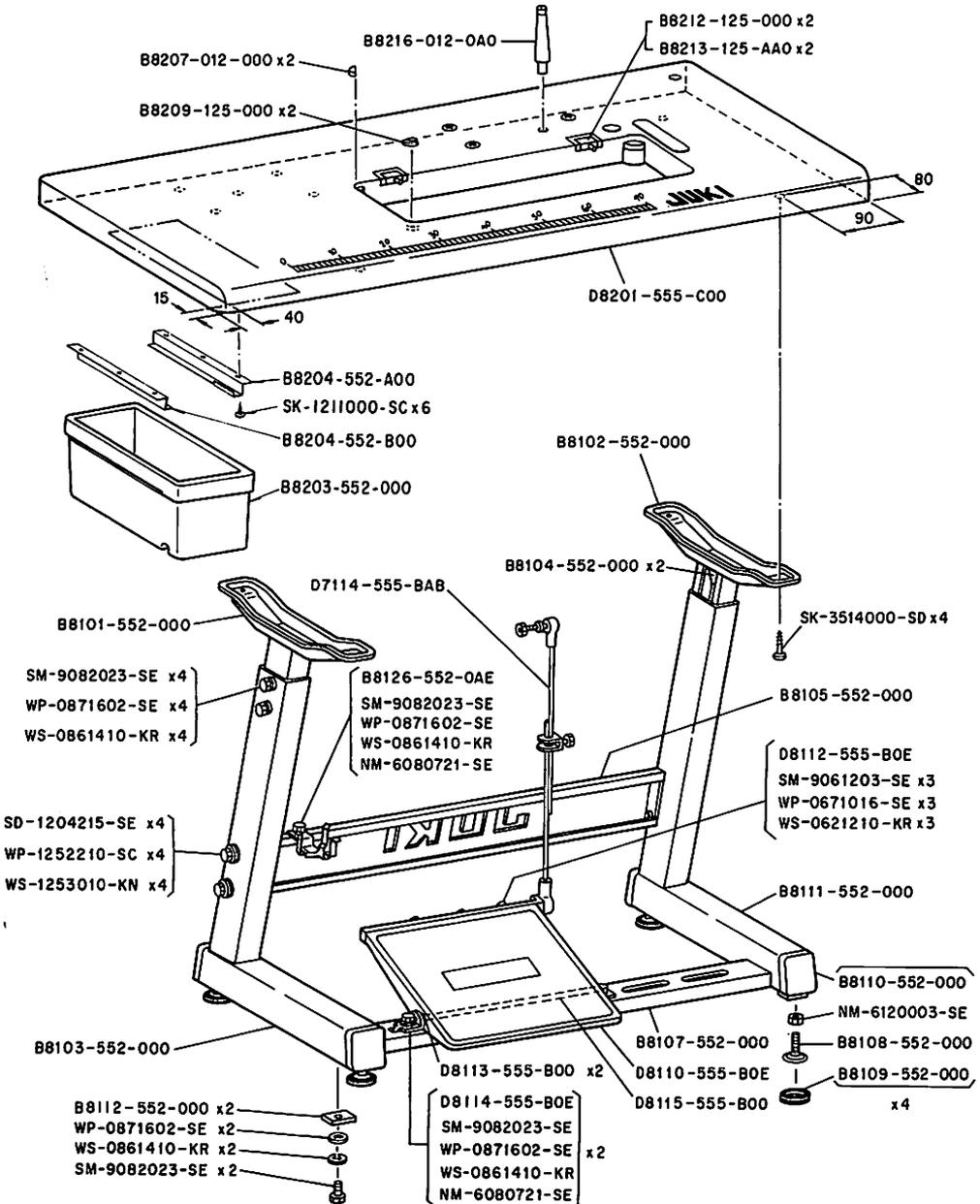
7. Tighten the lock nuts of the stopper (A) and the coupler respectively.
8. Loosen the lock nut of the stopper (B), push the presser lifter lever towards the solenoid with your hand and adjust the height of the stopper (B) so that the playing gap between the top end/of the knee lifter rod and the knee lifter connecting rod located on the machine head become about 1mm(3/64"). After obtaining a proper position, retighten each lock nut.

## VI. SPECIAL SWITCH TO HOLD THE NEEDLE AT THE TOP POSITION (Optional attachment)

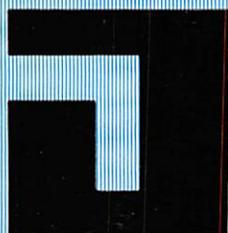
We are also ready to supply you with a special switch to hold the needle at the top position when the machine is stopped during a sewing work with the pedal at the neutral position. This switch is operated with your knee. For further details, please contact our agent in your area or our main business office.

Diagram Showing Method of Assembling Table

JZ-D31







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