

# SIRUBA®

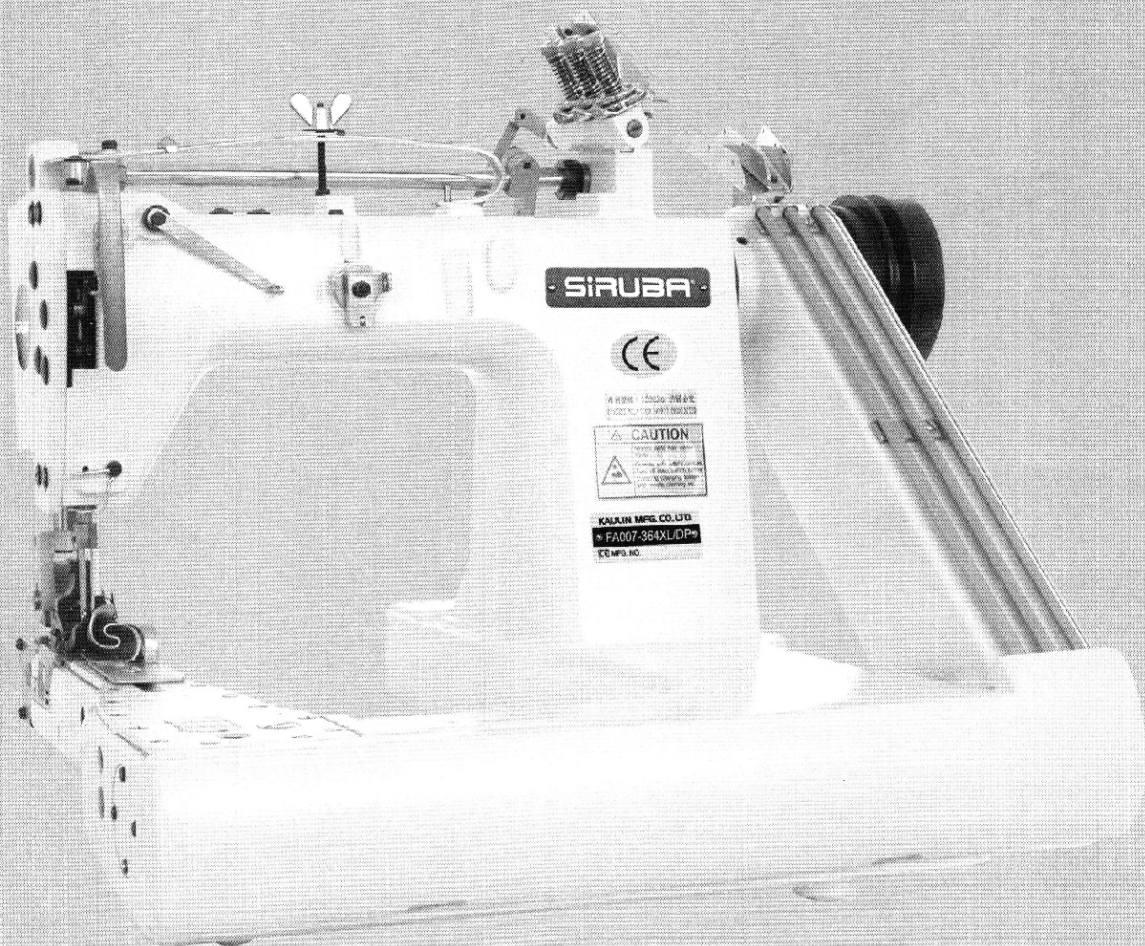
銀箭牌工業用縫紉機

INDUSTRIAL SEWING MACHINE

# FA007

## 使用說明與零件圖

## INSTRUCTION AND PARTS LIST



CE



高林股份有限公司  
KAULIN MFG. CO., LTD.

## ●FEATURES

- ★The DT6-927 Feed-off-the-Arm Double Chain Stitch Machine is most suitable for sewing the tubular parts of shirts, pyjamas, work clothes, sweat pants, etc.
- ★High speed operation at 4,000 stitches per minute will increase production efficiency.
- ★The DT6-927 employs ball bearings where necessary and all working parts are completely lubricated.
- ★The machine can be arranged in a way most suitable for factory line operation by use of special motor bases.



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## SPECIFICATIONS

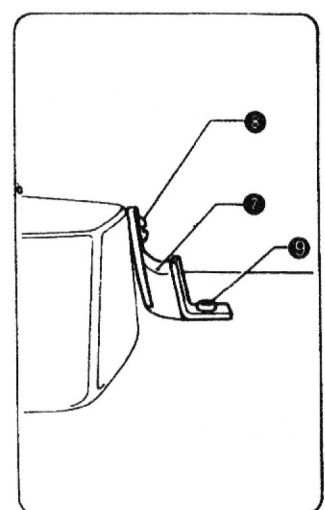
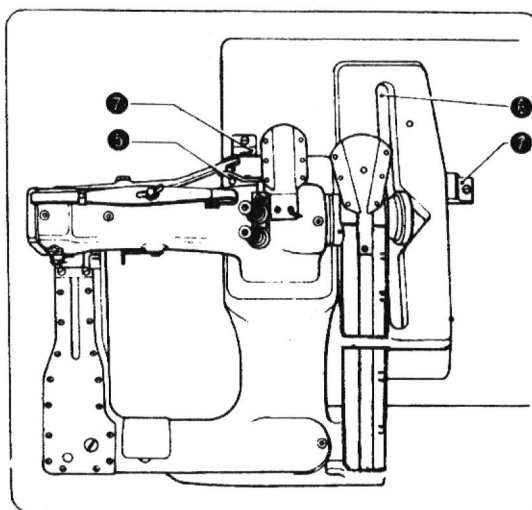
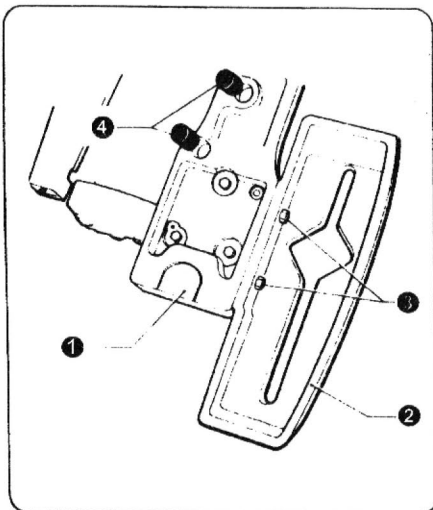
Model	FA007				
Use	Thin materials	Medium-thick materials		Thick materials	
Stitch pattern	Twin-needle, twin-thread double chain stitch, parallel sewing				
Max. sewing speed	3,600 spm	4,000 spm			
Stitch length	1.2~2.5 mm	1.2~3.2 mm			
Needle gauge	$\frac{3}{16}$ inch (4.8 mm)	$\frac{1}{8}$ inch (3.2 mm)	$\frac{5}{32}$ inch (4 mm)	$\frac{3}{16}$ inch (4.8 mm)	$\frac{1}{4}$ inch (6.4 mm)
Needle	TV×1				
Needle bar stroke	27 mm	27 mm		30 mm	
Min. arm size	178 mm				
Puller device	Equipped	None			

## TABLE OF STANDARD GAUGES

Gauge set	Needle holder	Needle plate	Presser foot	Feed dog	Looper assembly	Looper thread guide arm	Lapper
$\frac{1}{8}$ MH	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$ MH
$\frac{3}{16}$ MH	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{1}{8}$	$\frac{3}{16}$ MH
$\frac{1}{4}$ MH	$\frac{1}{4}$	$\frac{1}{4}$ H	$\frac{1}{4}$ H	$\frac{1}{4}$ H	$\frac{1}{4}$ H	$\frac{1}{4}$ H	$\frac{1}{4}$ MH

## INSTALLING

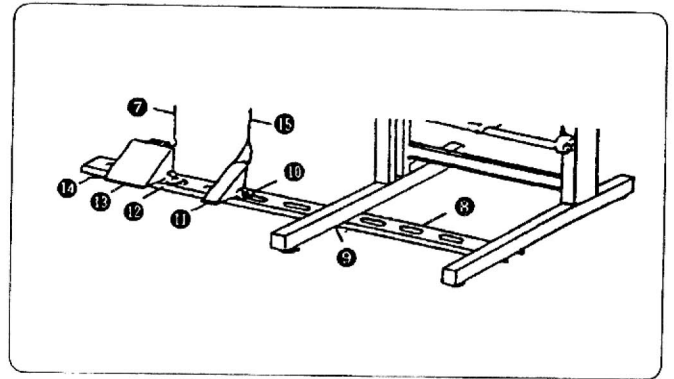
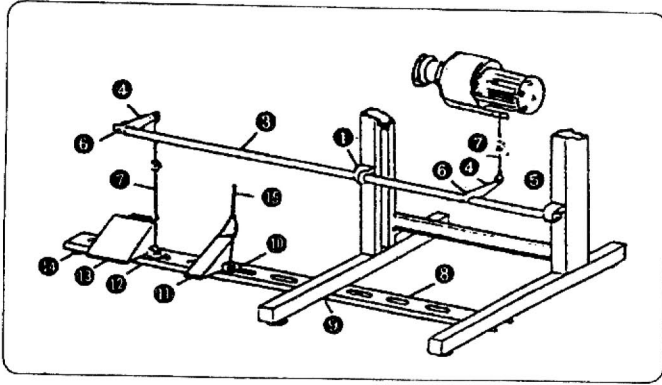
### 1 Installing the Machine Head



1. Install pulley cover base ② on machine bed ① with two hexagonal bolts ③.
2. Insert bar cushions ④ into the holes in the bottom of the bed.
3. Place the machine head on the table, adjust its position in forward and backward directions by aligning it with the hole for presser bar lifter chain ⑤, and in sidewise directions by aligning it with belt hole ⑥.
4. After fastening cushions ⑦ to the machine bed and pulley cover base with set screws ⑧, fix them to the table with screws ⑨.

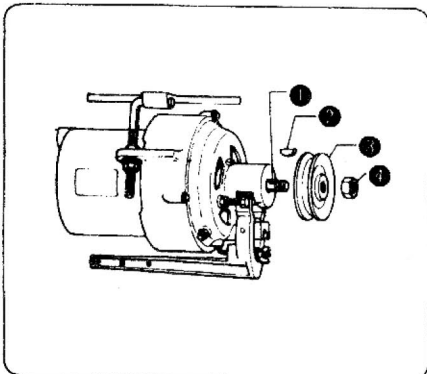


## 2 Installing the Treadle and Chain



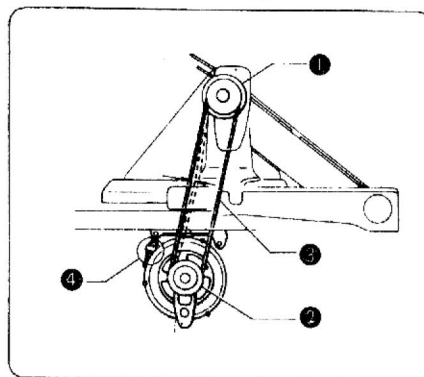
1. Fasten connecting lever bearing ① to the beam in the upper part of the table legs with nut ②.
2. Slide connecting lever L ④ onto connecting lever shaft ③.
3. Fit connecting lever shaft ③ to connecting lever bearing ①, and secure it with connecting lever shaft collar ⑤.
4. Set connecting lever L ④ in line with the clutch lever hole, and tighten it with square head bolts ⑥.
5. Hook connecting rod ⑦ to the clutch lever and connecting lever L ④.
6. Slide another connecting lever L ④ onto connecting lever shaft ③, and fix it with square head bolts ⑥.
7. Fasten treadle shaft ⑧ onto the lower beam across the table legs with hexagonal bolts ④.
8. Slide pedal stopper ⑩ and presser foot lifter pedal ⑪ onto treadle shaft ⑧, and fasten it with pedal stopper ⑩.
9. Slide treadle stopper ⑫ and treadle ⑬ onto treadle shaft ⑧, and fasten treadle stopper ⑫ in such a way that treadle ⑬ will move lightly.
10. Slide treadle support ⑭ onto the end of treadle shaft ⑧, turn it until treadle shaft ⑧ is parallel with the floor, and fasten it.
11. Hook one end of connecting rod ⑦ to connecting lever L ④, and hook the other end of it to treadle ⑬.
12. Hook one end of chain ⑮ to the presser foot lifter lever, pass the other end through the hole in presser foot lifter pedal ⑪, and adjust the chain length so that the pedal will be at the same height as treadle ⑬.

## 3 Installing the Motor Pulley



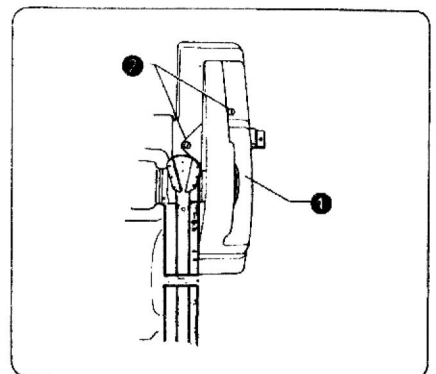
With motor shaft key way ① up, insert key ② into the key way, slide motor Pulley ③ onto the motor shaft, and fasten it with nut ④.

## 4 Belt Tension adjustment



Place belt ③ on machine pulley ① and motor pulley ②, and adjust the belt tension with tension regulator ④ so that the belt sags about 25 to 30 mm when it is pressed with the thumb at the center point between the pulleys.

## 5 Installing Belt Cover



Install belt cover ① on the pulley cover base with set screws ②.

## 6 Motor and Motor Pulley

### 1. Motor

Use the motor specified below.

Three-phase	2-pole, 400 W motor
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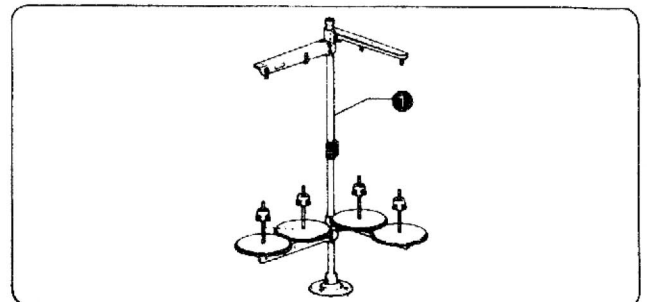
### 2. Motor Pulley

Use the correct motor pulley suitable to the frequency of your power supply as specified below.

Frequency	Sewing speed	Motor pulley	Belt size
50Hz	3,600	90	M-44
	4,000	100	
60Hz	3,600	75	M-43
	4,000	85	

## 7 Spool Stand

Assemble spool stand ① as shown below, and install it at the right rear corner of the table with screws.

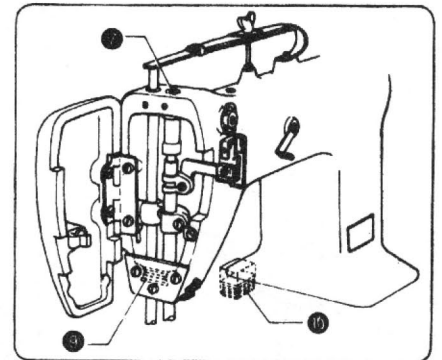
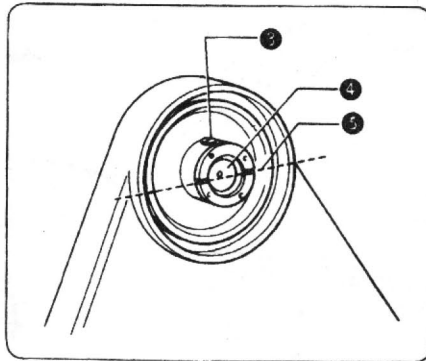
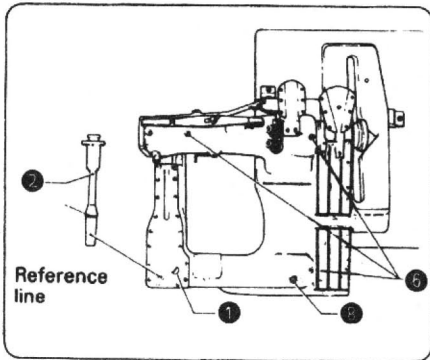




# LUBRICATION AND RUNNING IN

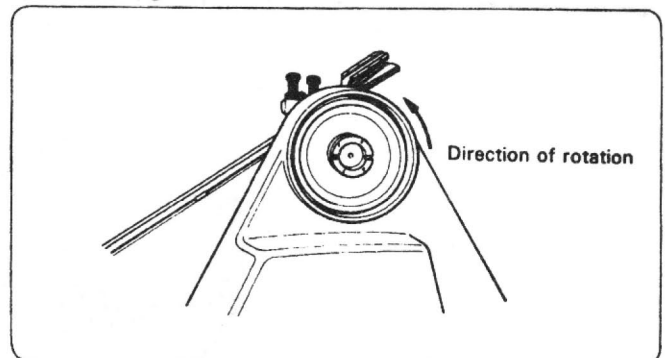
## 1 Lubrication

Be sure to oil the following points before using your sewing machine.



1. After setting up the machine, remove adjusting cover screw ①, and pour oil in up to the reference line on oil gauge ②.
2. Turn the pulley until oil cap ③ is up, remove oil cap ③ and pour oil into oil tank ④ until it is full. If the oil in the oil tank decreases below tank center line ⑤, the oil will not be drawn into the upper shaft, causing imperfect lubrication. Be sure to keep the oil in the oil tank above oil tank center line ⑤.
3. Pour about 5 drops of oil into 3 oil cups ⑥ and needle bar bushing oil hole ⑦ every week.
4. Remove oil drain screw ⑧ from time to time to discharge the used oil which has collected in the front bed oil sump.
5. Wipe arm jaw ⑨ and rear bed oil sump ⑩ from time to time to remove oil from them.

## 2 Running In



Switch the power on, and make sure that the pulley runs in the arrow direction. Operate your machine at about 3,500 spm for the first 3 to 4 days to assure a long machine life.

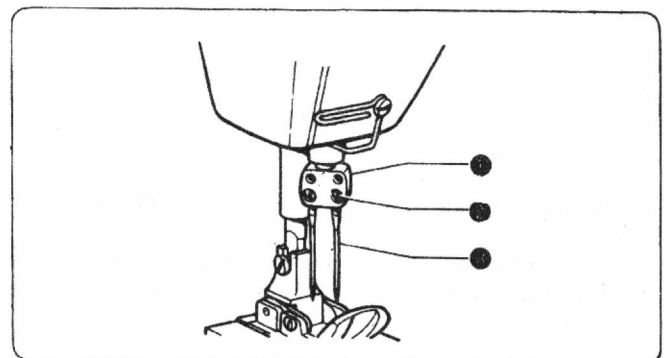
# CORRECT OPERATION

## 1 Needles and Threads

The needle and threads to be used vary depending on sewing conditions. Select the correct ones by referring to the table below.

Needle	Thread	
	Upper thread	Lower thread
#11	Cotton #80	Cotton #100
#14	Cotton #60	Cotton #80
#16	Cotton #50	Cotton #60
#19	Cotton #30	Cotton #50

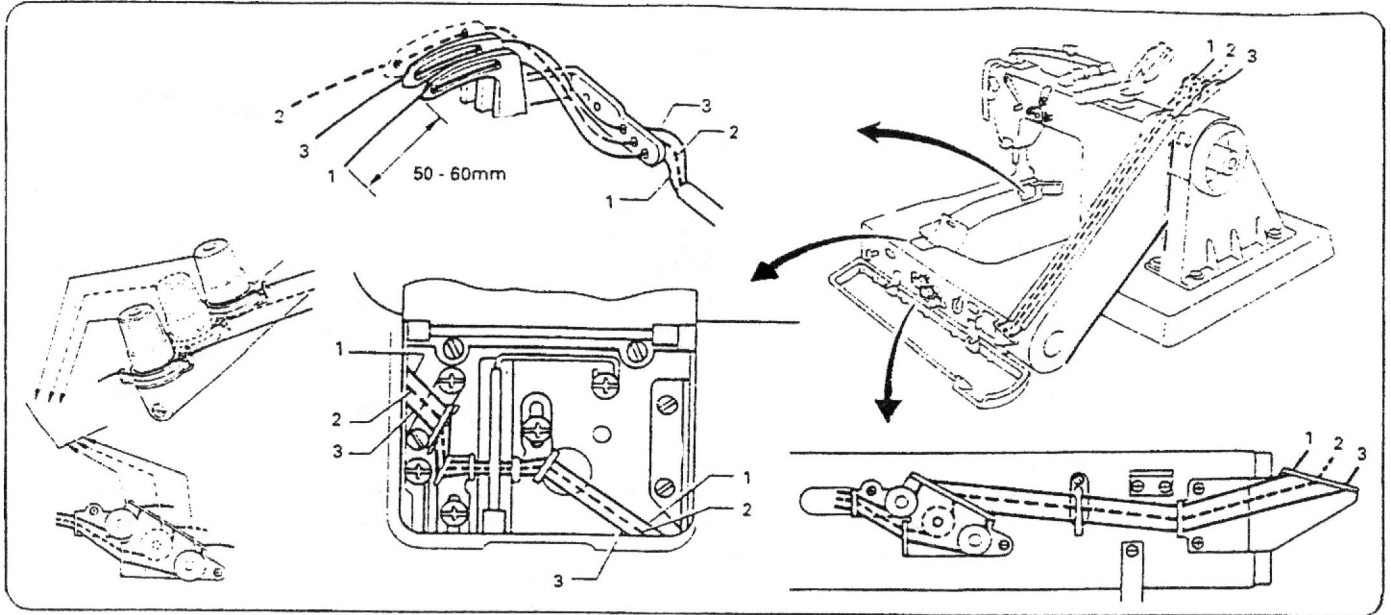
## 2 Installing the Needles



1. Turn the pulley until needle holder ① is raised to the highest position.
2. Loosen needle set screws ②, hold needles ③ with their long grooved side facing front, insert them into needle holder ① all the way, and fasten the needle with needle set screws ④.

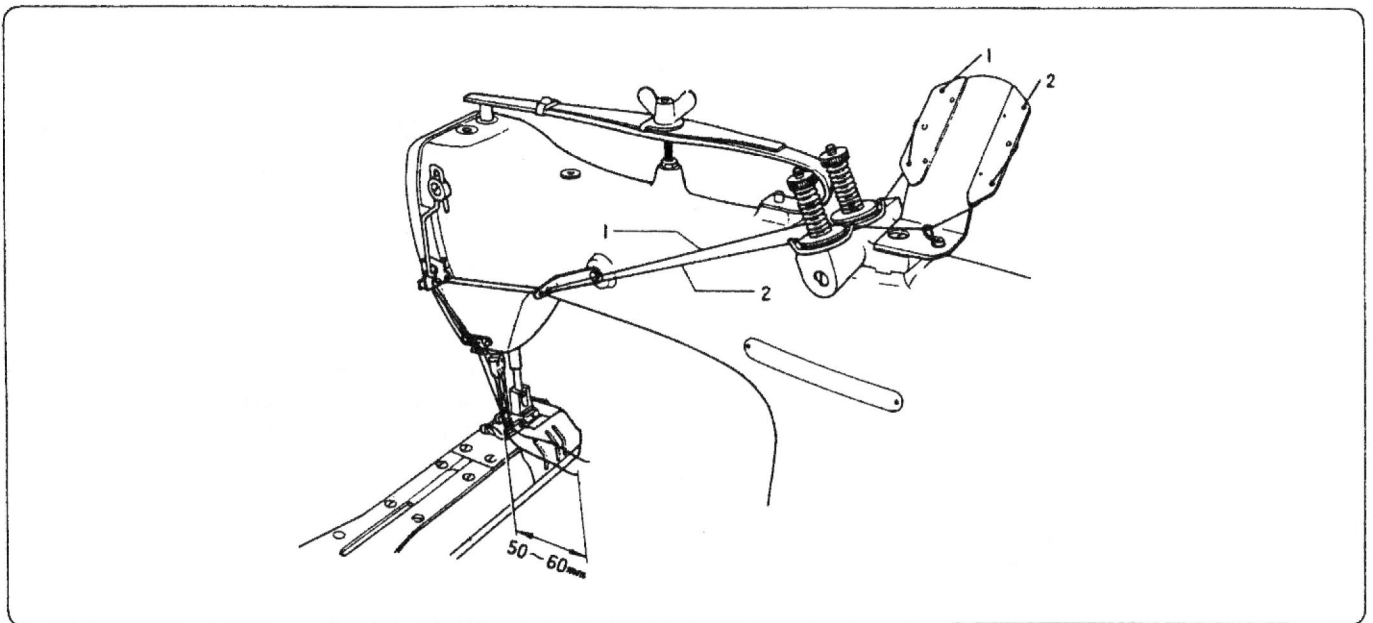
### 3 Lower Threading

Pass the lower threads as shown in the figure below.



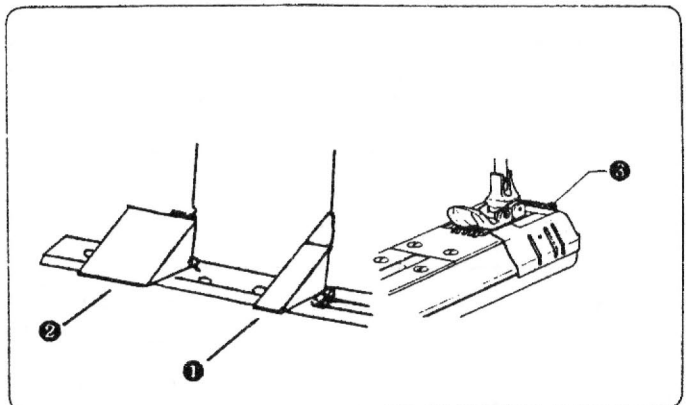
### 4 Upper Threading

Pass the upper threads as shown in the figure below.

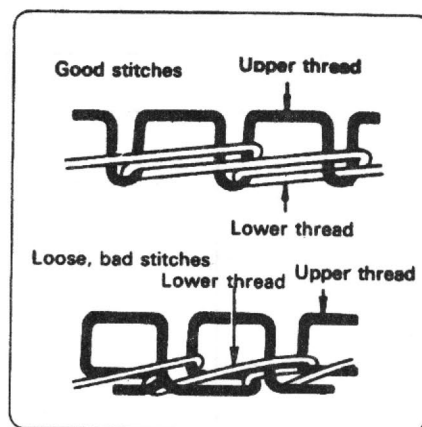
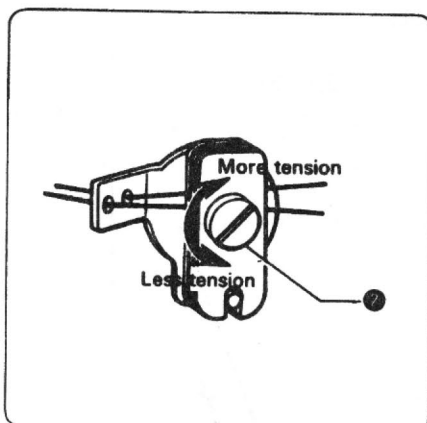
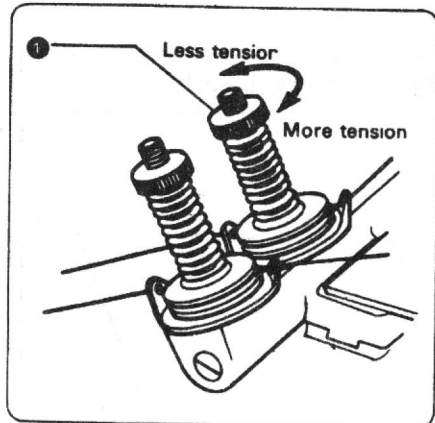


### 5 Sewing

1. Switch the power on.
2. Depress presser lifter pedal ① and place the work under the presser foot.
3. Release the presser lifter pedal.
4. The machine starts running when treadle ② is stepped down.
5. After sewing the work, move the work to thread cutter ③ to make blank stitches, and cut the thread with it.



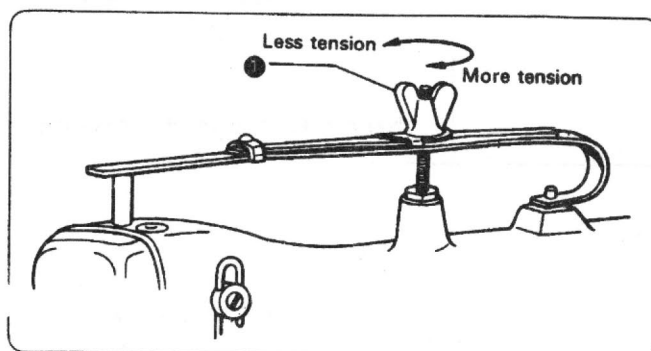
## 6 Thread Tension



1. Adjust the upper thread tension properly by turning upper thread adjusting screw ①.
2. Adjust the lower thread tension properly by turning lower thread adjusting screw ②.

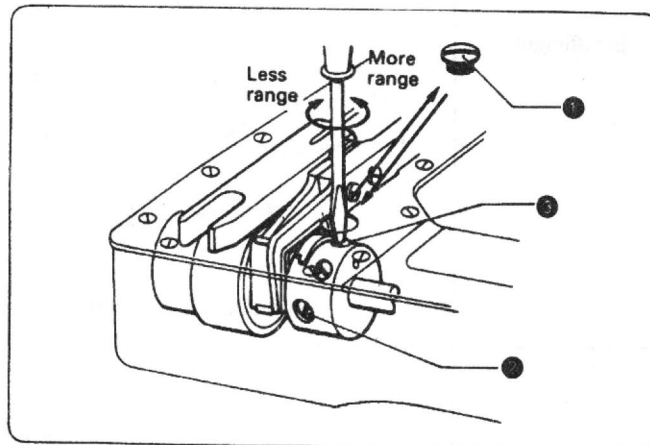
## 7 Presser Foot Pressure Adjustment

Adjust the presser foot pressure by turning wing nut ① so that the pressure is just enough to feed the work positively and keep the work from slipping.



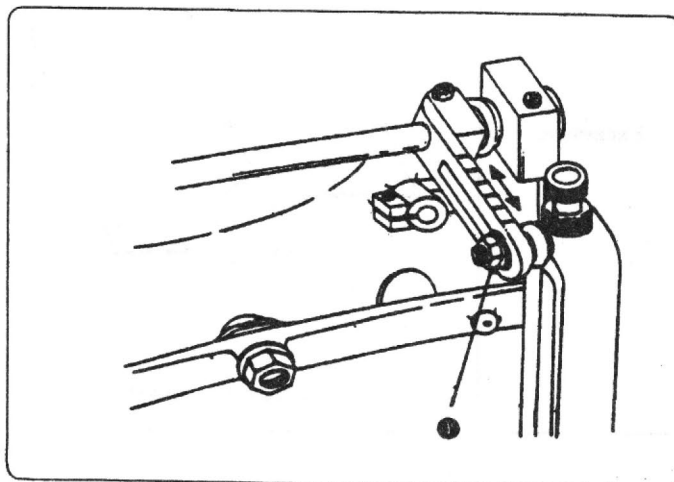
## 8 Stitch Length Adjustment

1. Remove adjusting cap screw ①.
2. Turn the pulley toward yourself until screw ② comes to the hole for the adjusting cap screw.
3. Loosen screw ③ with screwdriver, turn the pulley about one-quarter of a turn in the same direction so that horizontal eccentric adjusting screw ④ will come to the hole for the adjusting cap screw.
4. Stitch length decreases when horizontal eccentric adjusting screw ④ is turned clockwise with screwdriver, and increased when the same screw is turned counterclockwise. Exercise care to keep the feed dogs clear of the slot in the needle plate.
5. After the above-mentioned adjustment retighten screw ③ securely.



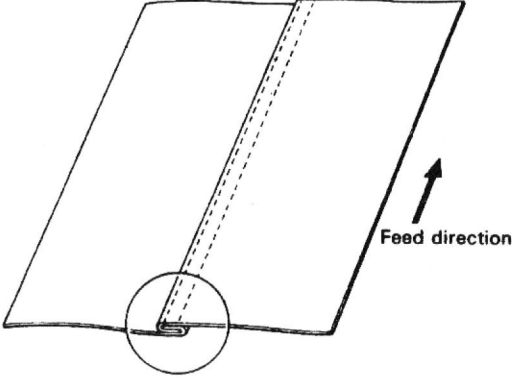
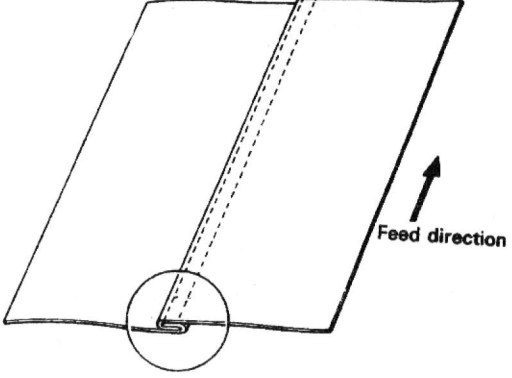
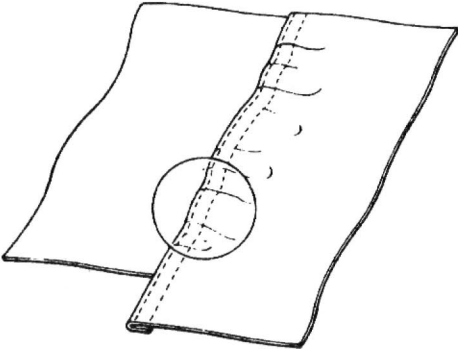
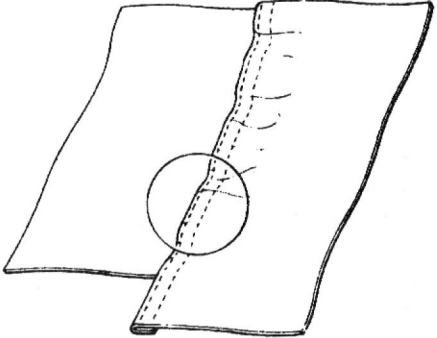
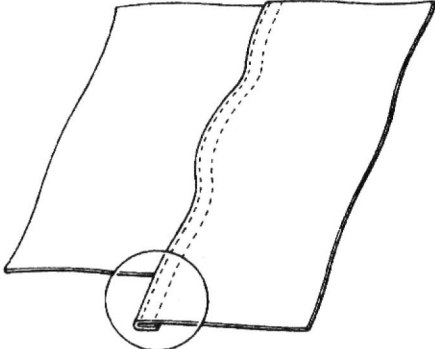
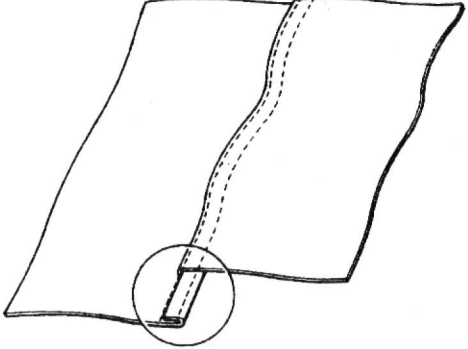
## 9 Puller Feed Adjustment (Model FA007-264/DP)

1. After adjusting the STITCH LENGTH, you have to readjust the PULLER FEED again.
2. Loosen the nut ①, you can get more feed toward outside, get less toward inside.
3. After adjusting, tighten the nut ①



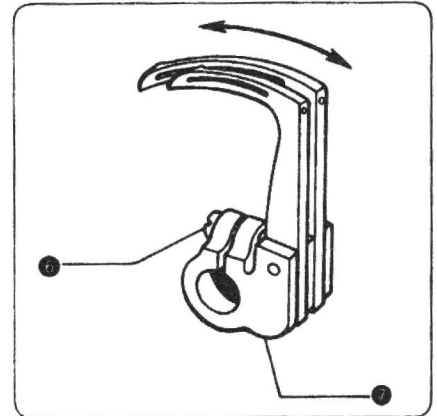
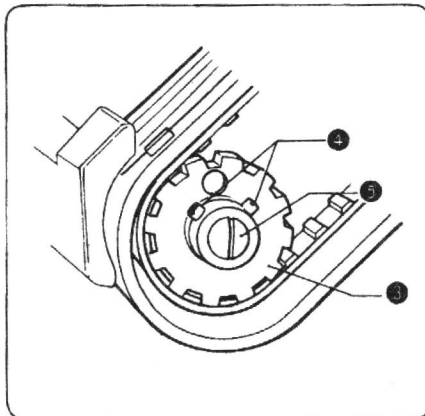
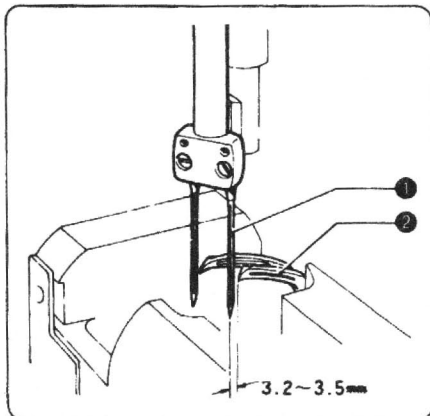


★The table below shows samples of stitches made with a highly elastic fabric and a fabric which is not so elastic.  
Adjust the puller feed by referring to this table.

Puller feed	Fabric with high elasticity	Fabric with low elasticity
Correct	 <p data-bbox="389 826 863 857">Neither non-alignment nor sewing wrinkles.</p>	 <p data-bbox="967 831 1441 862">Neither non-alignment nor sewing wrinkles.</p>
Insufficient	 <p data-bbox="485 1431 778 1462">Non-aligned, and wrinkled.</p>	 <p data-bbox="1054 1435 1348 1467">Non-aligned, and wrinkled.</p>
Excessive	 <p data-bbox="480 2027 793 2058">Non-aligned, and very wavy.</p>	 <p data-bbox="1046 2027 1359 2058">Non-aligned, and very wavy.</p>

# STANDARD ADJUSTMENTS

## 1 Needle and Loper Timing Adjustment

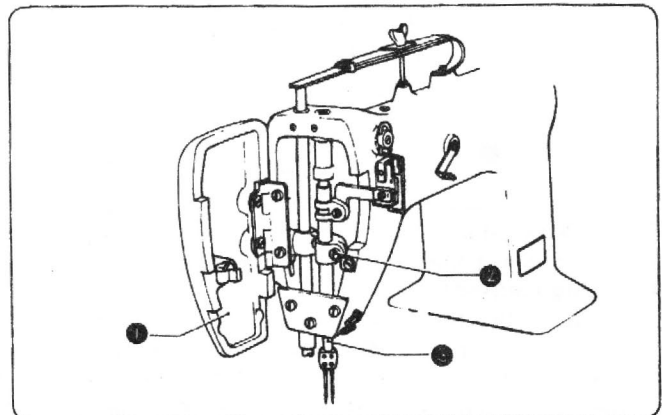
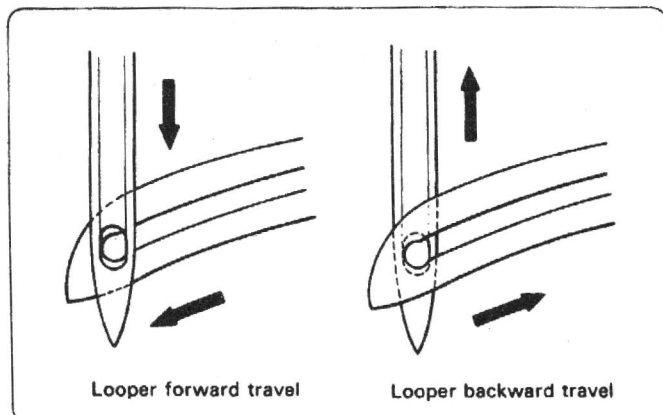


Make an adjustment so that, when needles ① are down lowest, loopers ② reach the end of their backward travel and the distance from the needle center to the looper tip is 3.2 to 3.5 mm.

### (Adjusting method)

1. Remove the presser foot, needle plate and feed dogs.
2. Loosen two set screws ① and cap screw ⑤ on lower belt wheel ④.
3. Turn the pulley toward yourself until needles ① come down to the lowest position.
4. Turn the lower-shaft until loopers ② reach the end of their backward travel.
5. Tighten cap screw ⑤ and two set screws ① securely.
6. Loosen set screw ⑥, move looper holder ⑦ in the arrow direction until the distance between the needle center and the looper tip is 3.2 to 3.5 mm, and retighten set screw ⑥ securely.

## 2 Needle Bar Height Adjustment

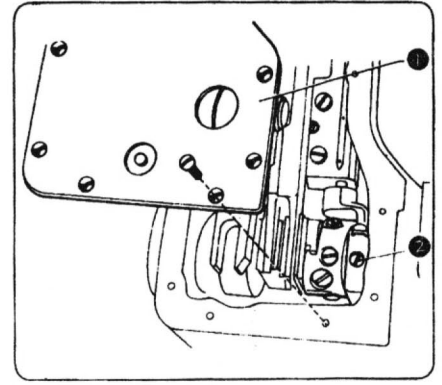
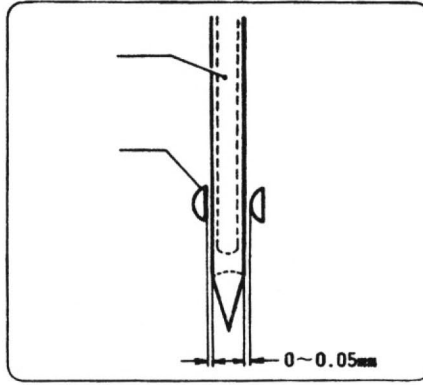
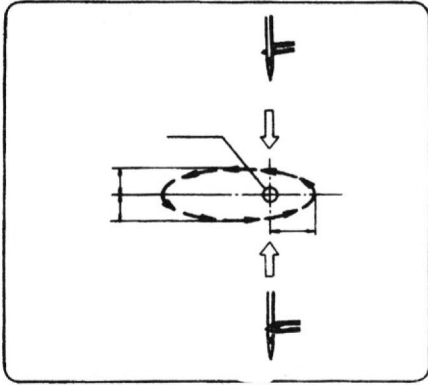


Adjust the needle bar height so that the looper thread eyes will match the needle eyes in the forward and backward travels of the loopers.

### (Adjusting method)

1. Turn the pulley toward yourself until the loopers move forward from the rightmost position to a point where the looper thread eyes are in line with the needles eyes.
2. Open face plate ①, loosen needle bar clamp screw ②, and move needle bar ③ up or down until the looper thread eyes are in line with the needle eyes.
3. Retighten needle bar clamp screw ② securely.
4. After the adjustment, turn the pulley toward yourself and make sure that the looper thread eyes match the needle eyes in the forward and backward travels of the loopers.

### ③ Timing of Loopers Running Clear of Needles

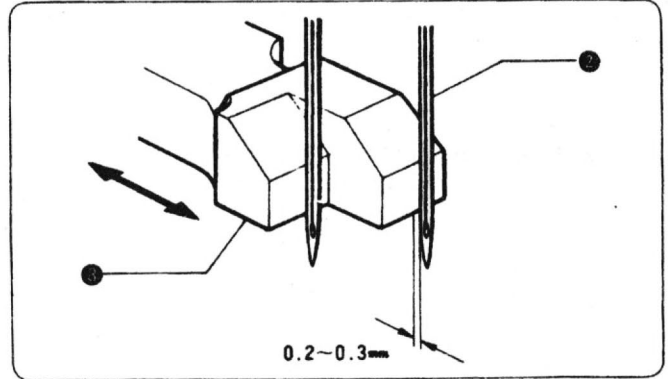
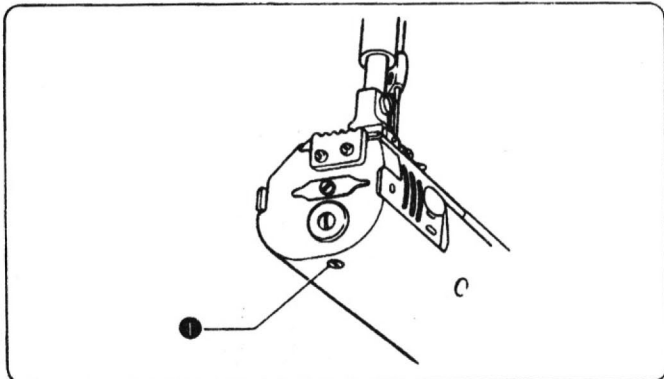


The loopers run in back of the needles in their forward travel and in front of the needles in their backward travel. Adjust the clearance between the needles and the loopers to anywhere from 0 to 0.05 mm in both the forward and backward travels.

#### (Adjusting method)

1. Remove forward feed arm cover ●, turn the pulley toward yourself until the longitudinal feed eccentric ring set screw shows through adjusting hole ●.
2. Loosen the set screw to such an extent that it does not stick out of the longitudinal feed eccentric ring, turn the pulley toward yourself again and loosen the other set screw.
3. With screwdriver kept on the set screw, turn the pulley to adjust the clearance between the needles and the loopers.
4. After the adjustment, retighten the two set screws securely and put the forward feed arm cover back on.

### ④ Needle Guard Adjustment (Standard specification)



The needle guard prevents the needles from contacting the loopers in their forward travel. Position the needle guard as close to the needles as possible but make sure that it is clear of the needles.

#### (Adjusting method)

1. Turn the pulley toward yourself until the needles come down to the lowest position.
2. Loosen lower set screw ● at the end of the forward feed arm.
3. Adjust the clearance between needles ● and needle guard ● to anywhere from 0.2 to 0.3 mm by moving needle guard ●.
4. After the adjustment, retighten set screw ● securely.

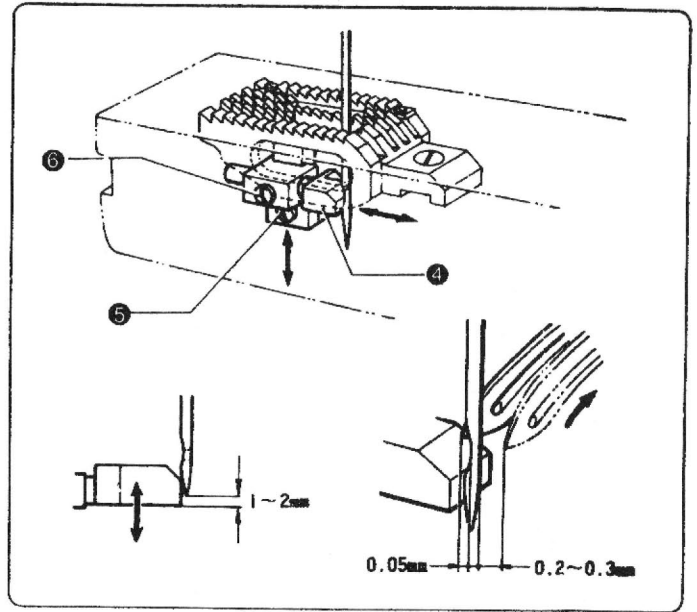


### [Puller specification]

The clearance between the needles and the tips of the loopers will be 0.05 mm, pushing the needles by needle guard ④.

### <Adjusting Method>

1. Turn the pulley toward yourself until the needles come down to the lowest position.
2. Loosen stop screw ①, and raise or lower needle guard ④ so that the bottom ends of the needle eyes will be about 0.5 mm above the bottom of needle guard ④.
3. Turn the pulley toward yourself again until the tips of the loopers come to the centers of the needles.
4. Loosen stop screw ②, move needle guard ④ to the left or to the right, and adjust so that the clearance between the needles and the tips of the loopers will be 0.05 mm, pushing needle points by needle guard ④. At this time, please make sure that the clearance between the loopers and the needles is 0.2~0.3 mm in the backward movement of the loopers.

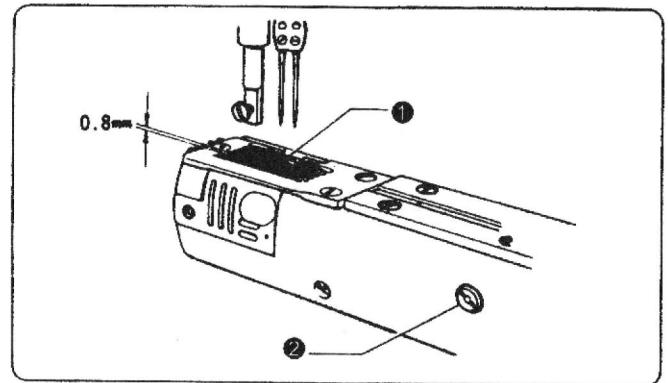


### ⑤ Feed Dog Height Adjustment

Adjust the height of feed dog ① so it is 0.8 mm above the top of the needle plate when feed dog ① is at the highest position.

#### <Adjusting method>

Adjust the height of feed dog ① by turning feed bar eccentric shaft ②

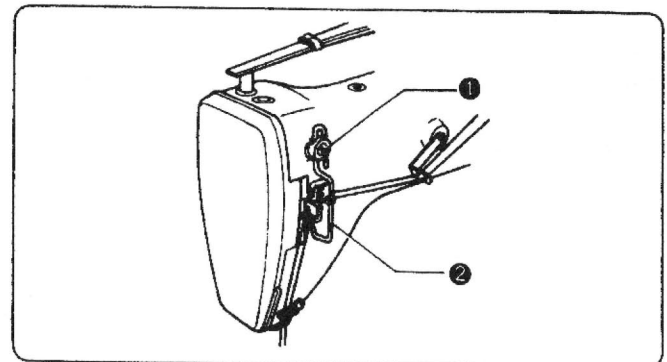


### ⑥ Upper Thread Take-up Thread Guide Adjustment

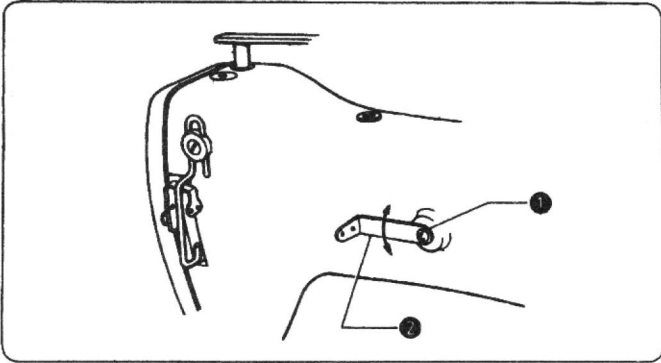
Adjust the height of the upper thread take-up thread guide so that the upper thread will not be loose when the needle bar reaches the lowest point after the loopers run out of upper thread loops.

#### <Adjust method>

1. Turn the pulley toward yourself until the loopers run out of upper thread loops.
2. Loosen set screw ①, and raise or lower upper thread take-up thread guide ② until it contacts the upper thread.



## 7 Upper Thread Arm Thread Guide Adjustment

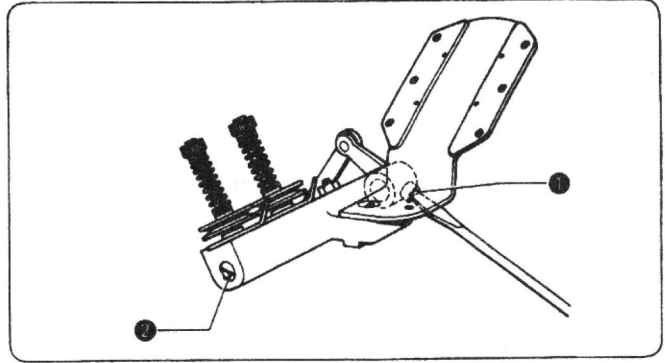


Adjust the upper thread arm thread guide so that the upper thread has a slight tension when the loopers run out of upper thread loops.

### (Adjusting method)

1. Loosen set screw ①, and raise or lower upper thread arm thread guide ② as much as necessary.
2. After the adjustment, retighten set screw ①

## 8 Thread Release Shaft Adjustment

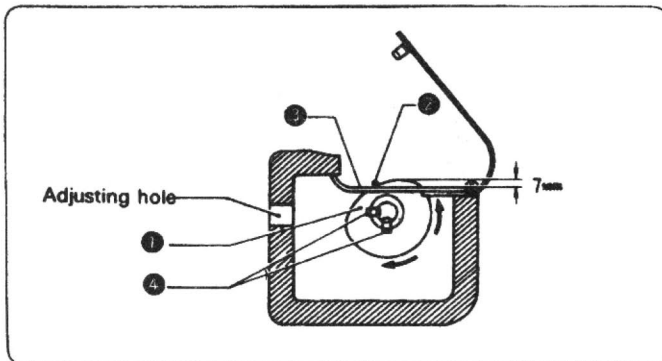


Adjust the thread release shaft so that the thread tension discs loosen when the presser foot is raised and tighten when the presser foot is lowered.

### (Adjusting method)

1. Loosen set screw ①.
2. Make an adjustment by turning thread release shaft ② so that the thread tension discs begin to loosen when the presser foot rises 4 mm above the top of the needle plate.
3. After the adjustment, retighten set screw ① securely.

## 9 Lower Thread Take-up Timing Adjustment

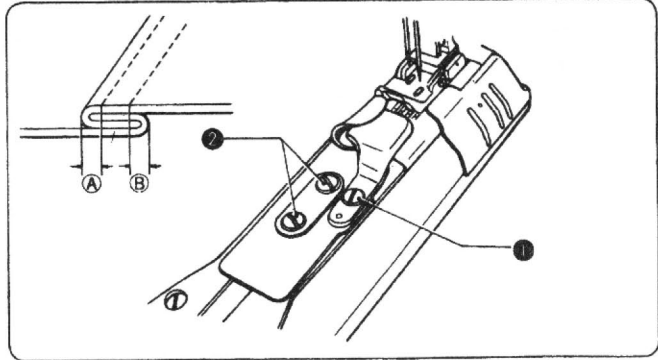


Make an adjustment so that, when the loopers begin moving backward, lower thread take-up ① contacts thread ② in the lower thread take-up lever guide, and is 7 mm up from lower thread take-up base ④.

### (Adjusting method)

1. Insert screwdriver through the adjusting hole in the bed, and loosen two set screws ④. Loosen
2. Raise lower thread take-up ① until it is 7 mm up from thread take-up base ④.
3. After the adjustment, retighten two set screws ④ securely.

## 10 Installing the Lapper



Insert the lapper guide plate from the front into the oblong slot in the forward feed arm cover, making sure that the end of lapper is clear of the presser foot.

### ★Lapper adjustment

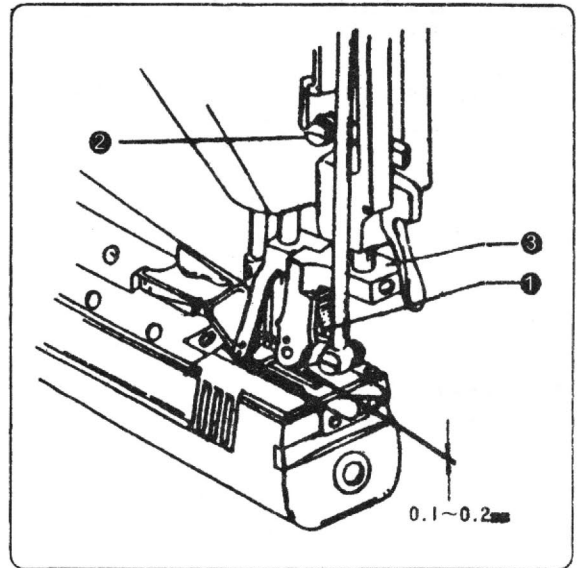
- Adjust felling distance of point (A) by loosening set screw ③.  
Adjust felling distance of point (B) by loosening set screw ②.

### 11 Puller Height Adjustment (Model 927-S/M-PL)

Adjust the height of puller ① so that it is 0.1 to 0.2 mm high from the top of the needle plate.

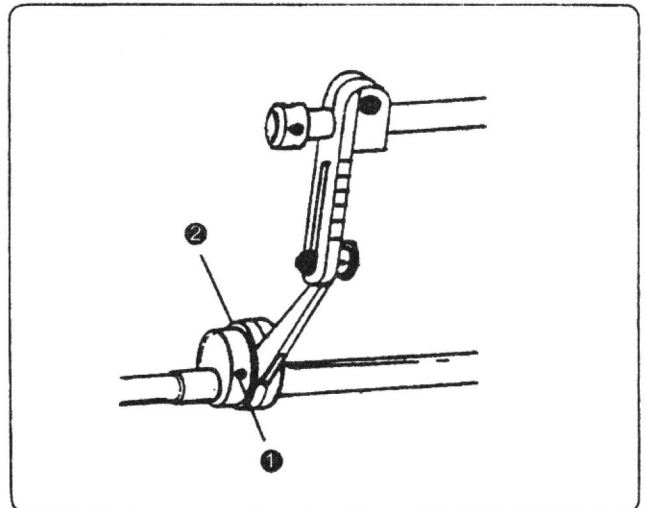
#### <Adjusting Method>

Loosen set screw ②, and move puller support ③ up or down until puller ① is 0.1 to 0.2 mm above the top of the needle plate.



### 12 Puller Device Timing Adjustment (Model FA007-264/DP)

1. With 3mm wrench to loosen the screw ① & ②
2. The timing of the feed will be starting when the needle is away from the needle plate about 5 or 6mm, and stoping at 10mm.
3. After adjusting the timing, retighten the screw ① & ②.





# TROUBLESHOOTING

Trouble	Cause	Inspection	Remedy	Page
<b>Thread breaks.</b>	Needles installed improperly.	Direction of long groove.	Refer to instructions for needle installing.	3
	Upper thread tension too great.	Upper thread tension.	Adjust upper thread tension.	5
	Lower thread tension too great.	Lower thread tension.	Adjust lower thread tension.	5
	Upper thread arm thread guide out of position.	Upper thread arm guide position.	Adjust upper thread arm thread guide.	10
	Needle eyes too small for threads.	Needle size and thread count.	Refer to the section on "Needles and Threads"	3
	Loopers damaged.	Damaged thread way.	Replace loopers.	/
	Needle groove damaged.	Burrs in long groove.	Replace needle.	/
<b>Needles break.</b>	Needles hit loopers.	Clearance between needles and loopers.	Adjust timing of loopers running clear of needles.	8
	Wrong timing of needles and loopers.	Timing of needles and loopers.	Adjust timing of Needles and loopers.	7
	Needle hit loopers.	Clearance between needles and needles guard.	Adjust needles guard.	8
	Needle eyes too small for threads.	Needle size and thread count.	Refer to the section on "Needles and Threads".	3
<b>Stitches skip.</b>	Needles installed improperly.	Direction of long groove.	Refer to instructions for needle installing.	3
	Looper points are dull.		Replace loopers with good ones.	/
	Clearance between needles and loopers too great.	Clearance between needles and loopers too great.	Adjust timing of loopers running clear of needles.	8
	Needle and looper timing wrong.	Needle and looper timing.	Adjust needle and looper timing.	8
	Lower thread take-up timing wrong.	Lower thread take-up timing.	Adjust lower thread take-up timing.	10
<b>Upper threads loose.</b>	Upper thread tension too small.	Upper thread tension.	Adjust upper thread tension.	5
	Lower thread tension too great.	Lower thread tension.	Adjust lower thread tension.	5
	Upper thread take-up thread guide out of position.	Looseness of upper threads at the lowest position of needle bar.	Adjust upper thread take-up thread guide position.	9
<b>Machine does not feed work.</b>	Feed dog too low.	Feed dog height.	Adjust feed dog height.	9
	Presser foot pressure too small.	Presser foot pressure.	Adjust presser foot pressure.	5
	Feed dog worn out.		Have serviceman check it.	/
	Presser foot floats and does not fully press work.		Have serviceman check it.	/
	Feed dog and presser foot work on one side only.		Have serviceman check them.	/

Trouble	Cause	Inspection	Remedy	Page
Non-alignment and wrinkles	Puller timing wrong.	Puller timing.	Adjust puller device timing.	11
	Puller feed incorrect.	Puller feed.	Adjust puller feed.	5
	Presser foot pressure incorrect.	Presser foot pressure.	Adjust presser foot pressure.	5
	Feed dog height incorrect.	Feed dog height.	Adjust feed dog height.	9