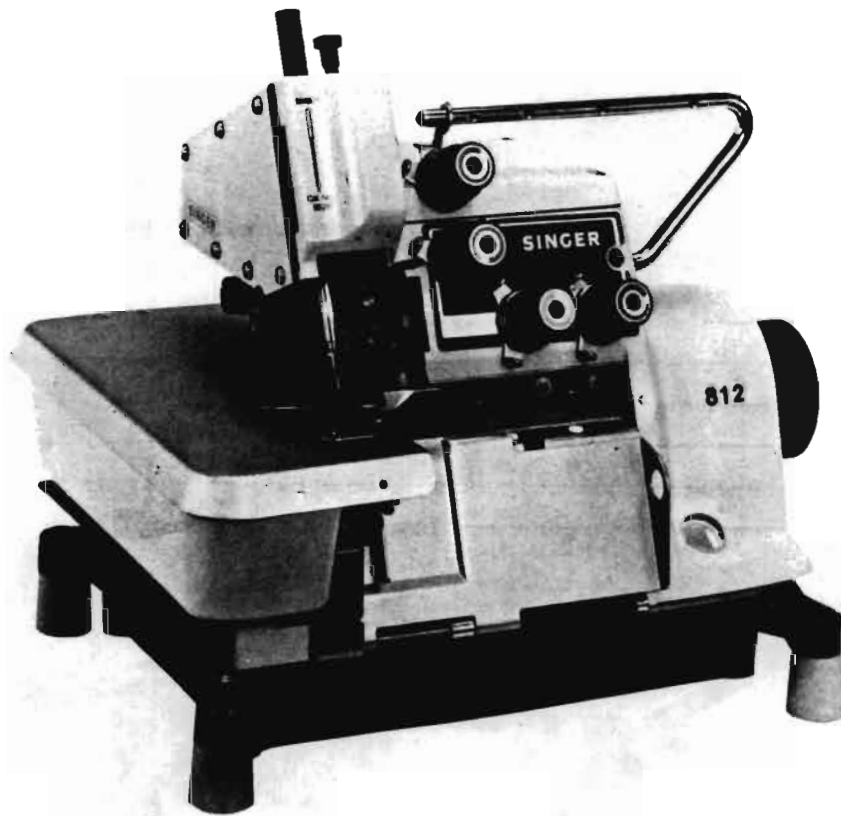


INSTRUCTION MANUAL

FOR

SINGER 812U

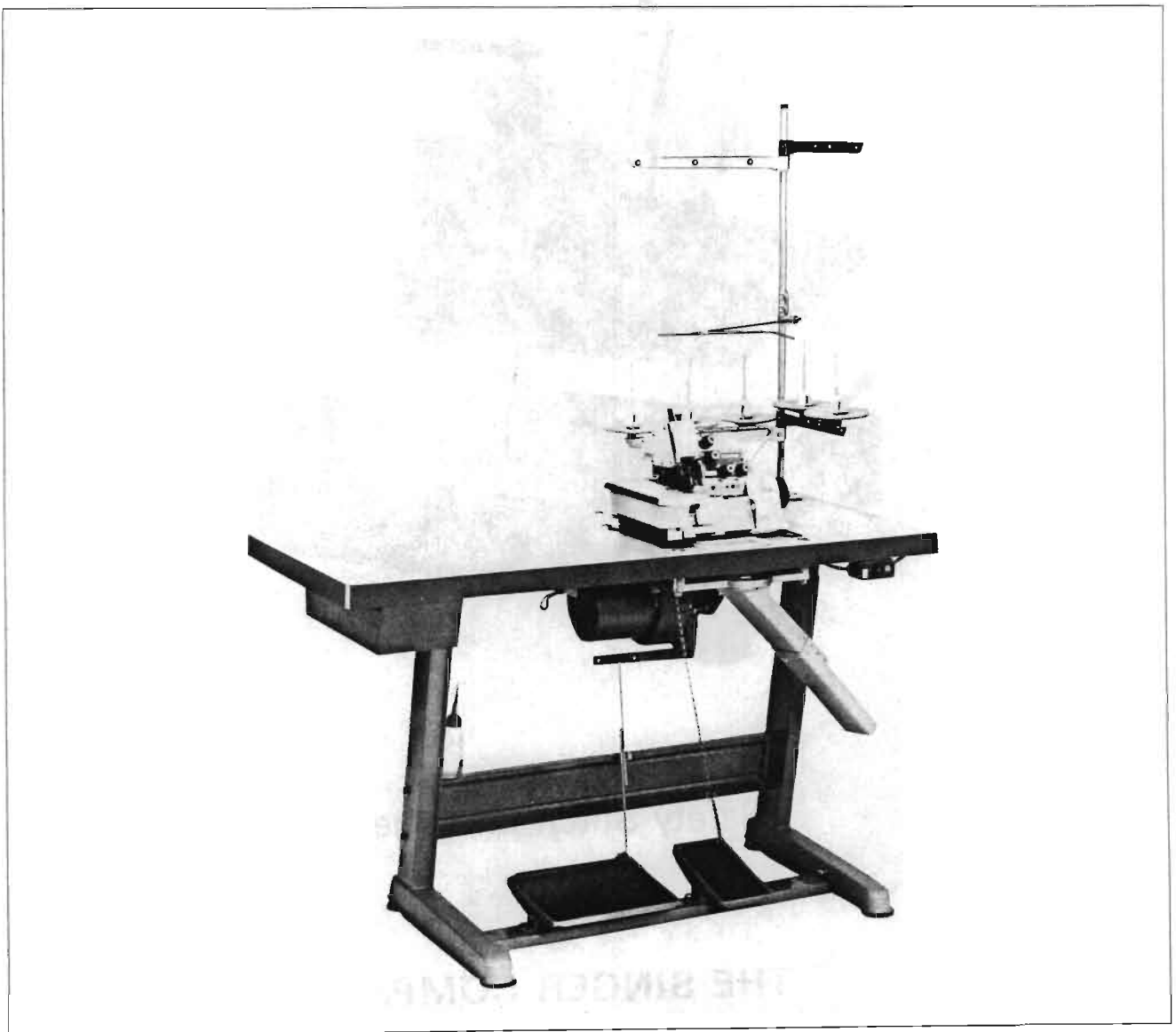


Safety Stitch Machine

THE SINGER COMPANY

FEATURES

- ☆ These models have the same sewing performance as the high-speed types (Model 842U) so they can be used for run stitching, ruffling, bulky stitching and many other applications.
- ☆ Differential feed ratio can be changed by a quadrant shaped adjustment which assures a wide differential range.
- ☆ Blade engaging angle can be easily adjusted for sharp cutting performance.
- ※ Most of the gauge parts, expendable parts, attachments and other devices of these models are interchangeable with those of Model 842U.



CONTENTS

SPECIFICATIONS	1
A. INSTALLATION	3
1. Machine head installation	3
2. Sewing speed	3
3. Motor pulley and belt	3
4. Belt and belt cover installation	4
5. Thread unwinder installation	4
6. Eye guard installation	4
B. LUBRICATION	4
1. Type of oil	4
2. Lubrication and oil change	4
C. OPERATION	5
1. Needle and thread	5
2. Setting needle	5
3. Threading	5
4. Thread tension	6
5. How to sew	7
6. Bight adjustment	8
7. Stitch length and differential feed adjustment	8
D. STANDARD ADJUSTMENTS	9
1. Left hand looper and needle bar adjustment	9
2. Right hand looper adjustment	10
3. Double-chain stitch looper adjustment	11
4. Knives adjustment	11
5. Feed dogs adjustment	12
E. INSTALLATION AND ADJUSTMENT OF ATTACHMENTS	12
1. Taping	12
TROUBLESHOOTING GUIDE	13

SPECIFICATIONS

THE SINGER COMPANY

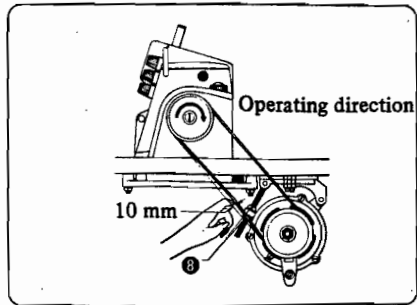
812U

MADE IN JAPAN

Sub class No.	Stitch type	No. of Needles	No. of threads	Needle gauge (mm)	Bight (mm)	Max. stitch length (mm)	Differential ratio	Presser foot lift (mm)	Feed dog		Needle size (Cat.No.)	Sewing speed (r.p.m)	Use	Devices	
									Pitch (mm)	(Main) type					
061-3 -4		2	5	2	3	3.6	0.3~1.8 ₃	4	1.6		(6120) #11	5000	Light materials		—
					4								Blouses Dress shirts	Setting sleeves Forming sleeves Joining body parts	
062-3		2	4	2	3	3.6	0.3~1.8	4	1.6		(6120) #11	5000	Light materials		—
					3								Blouses Dress shirts	Setting sleeves Forming sleeves Joining body parts	
063-3 -4 -5		2	5	3	3.6	0.3~1.8	6	1.6		(6120) #14	5000	Light & medium-heavy materials		—	
				4								Jumper Pajamas Ladies' & children's wear	Setting sleeves Forming sleeves Joining body parts Joining inner leg edges		
				5											
064-5		2	4	3	3.6	0.3~1.8	6	1.6		(6120) #14	5000	Light & medium-heavy materials		—	
				5								Jumper Pajamas Ladies' & children's wear	Setting sleeves Forming sleeves Joining body parts Joining inner leg edges		
065-5 -7		2	5	5	3.6	0.3~1.8	6	1.6		(6120) #16	5000	Medium-heavy & heavy materials		—	
				7			Overalls Work pants Ladies' wear					Setting sleeves Forming sleeves Joining body parts Joining inner leg edges			
066-5		2	4	5	3.6	0.3~1.8	6	1.6		(6120) #16	5000	Medium-heavy & heavy materials		—	
				5			Overalls Work pants Ladies' wear					Setting sleeves Forming sleeves Joining body parts Joining inner leg edges			
067-4		2	5	2	3.3	0.3~2.7	5	1.6		(6120) #14	5000	Ruffling light & medium-heavy materials		Ruffler	
				4			Blouses Neglige					Setting sleeves Setting cuffs Setting frills			
069-5		2	5	3	3.3	0.3~2.7	5	1.6		(6120) #14	5000	Ruffling light & medium-heavy materials		Ruffler	
				5			Ladies' & children's wear Blouses Neglige					Setting sleeves Setting cuffs Setting frills			
071-5 -6		2	5	5	3.3	0.3~2.7	5	1.6		(6120) #14	5000	Ruffling medium-heavy & heavy materials		Ruffler	
				6			Ladies' & children's wear					Setting sleeves Setting cuffs Setting frills			
073-4		2	5	2	3.3	0.3~2.7	5	1.6		(6120) #14	5000	Ruffling light & medium-heavy materials (Piping)		Binder Ruffler Tape winder	
				4			Blouses Neglige					Setting sleeves Setting cuffs Setting frills			

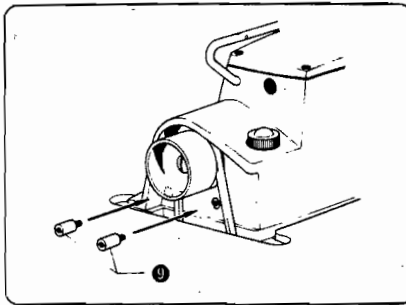
4. Belt and belt cover installation

Installing the belt

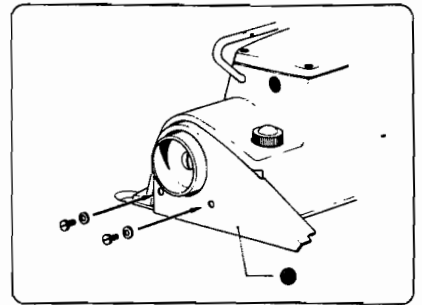


- (1) Adjust the nut ⑧ so that the belt will give in about 10 mm when depressed with finger.
- (2) Operating direction is clockwise.

Installing the belt cover

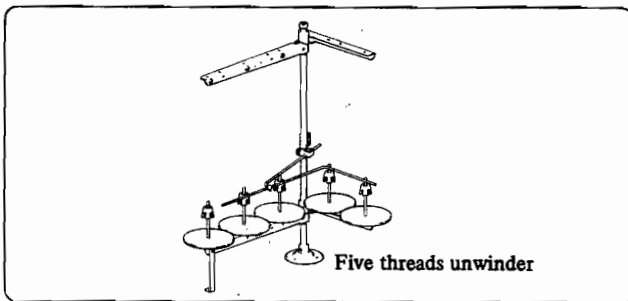


- (1) Install the stud ⑨ on the machine head.



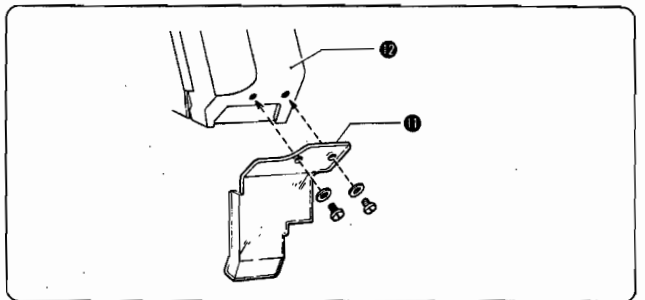
- (2) Install the belt cover ⑩ on the stud ⑨.

5. Thread unwinder installation



- (1) Install the thread unwinder in the far right corner of the table with screw, making sure that it will not interfere with machine operation.

6. Eye guard installation



- (1) Install the eye guard ⑪ on the face plate cover ⑫.

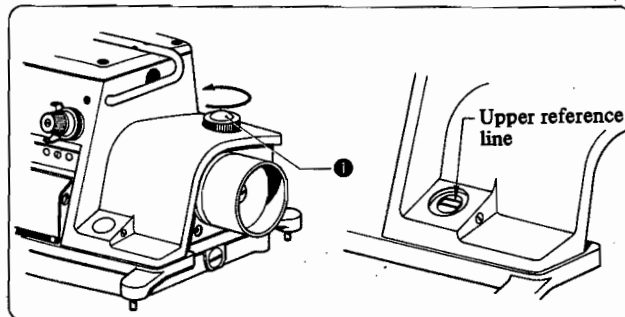
B. LUBRICATION

1. Type of oil

Use the oil (viscosity 37.8°C SUS70) supplied as accessory.

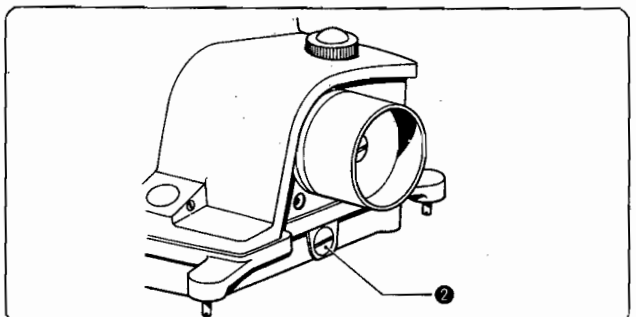
2. Lubrication and oil change

1. Oil supply



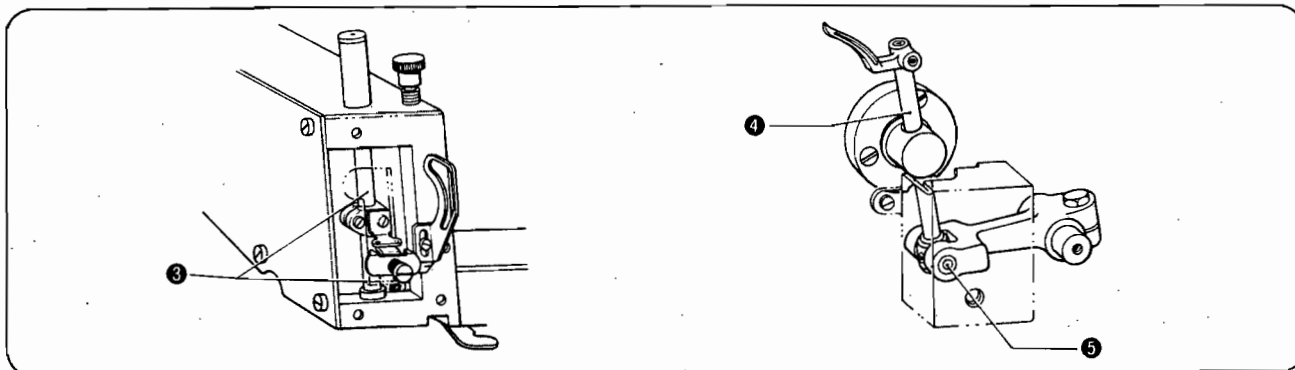
All oil has been completely discharged from the machine prior to shipment. Before operating machine, remove oil cap ① by turning it counterclockwise, and pour oil in until oil level reaches the upper reference line, using the accessory funnel.

2. Draining oil



When draining the oil, remove screw ② as shown at above. Change the oil after 100 hours of running in. After that period, change the oil about every 3 months.

3. Oiling points



When operating the machine for the first time, after unpacking it, or after a long period of non-use, be sure to pour a few drops of oil on needle bar ③ and right hand looper holder ④.

* If the machine is used every day, it need not be oiled daily.

But few drops of oil on only right hand looper driving lever ⑤ once a week.

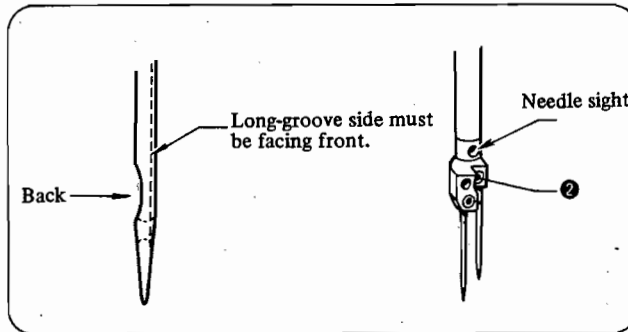
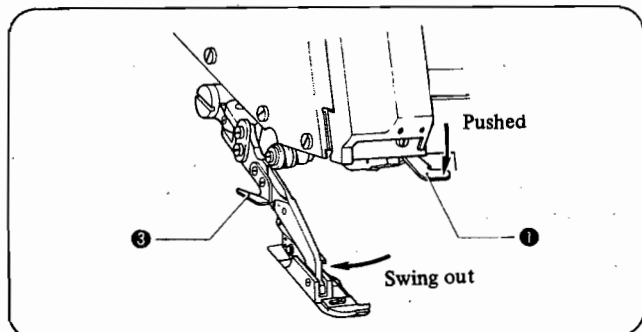
C. OPERATION

1. Needle and thread

Select a needle and thread by referring to the table below.

Fabrics	Needle		Needle thread		Looper thread	
	Type	Size	Type	Size	Type	Size
Broad cloth	Cat. No. 6120	#11	Cotton	#80	Cotton	#80
	"	#11	Dacron	#80	Dacron	#80
Jersey	"	#14	Dacron	#50	Textured nylon yarn	110/2 denier
Cabardine	"	#16	Cotton	#50	Cotton	#50
Denim	Cat. No. 6122	#21	Cotton	#30	Cotton	#30

2. Setting needle

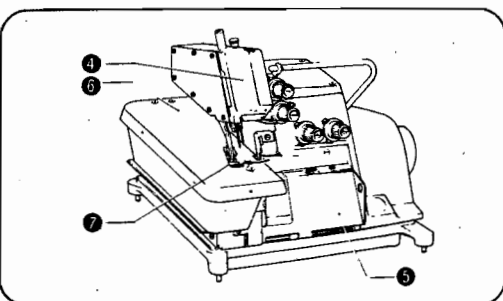


(1) Turn the pulley until the needle bar is raised close to the highest position, press down presser bar lifter ①, and swing out presser arm ② in the arrow direction.

(2) Loosen needle clamp screw ②, hold the needle with its long groove facing front insert the needle all the way into the needle clamp hole, and then tighten the needle clamp screw.

3. Threading

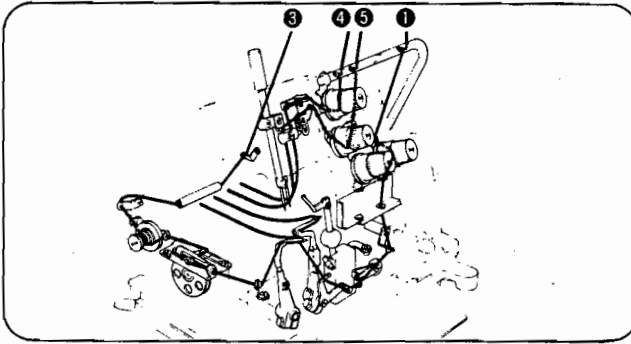
(3) Install trimming knife ③ on the main presser arm.



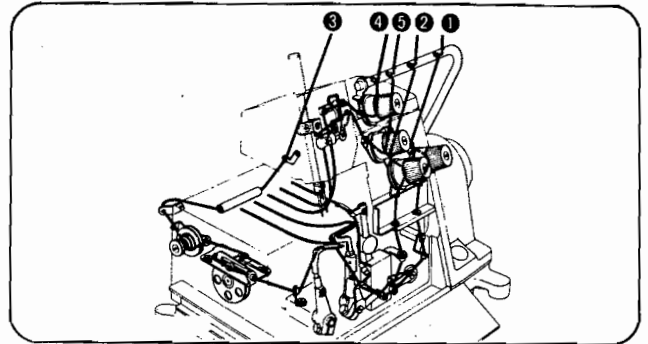
Before threading, open face plate cover ④, front cover ⑤ and cloth plate ⑥, turn the pulley until the needle is raised up highest, and then swing out presser arm ⑦.

Then, pass the thread in the order of the numbers shown.

In case of four-thread



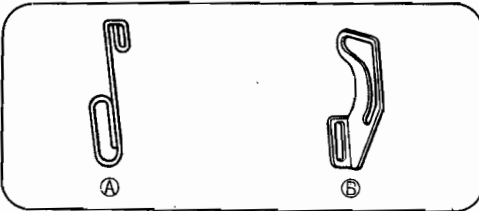
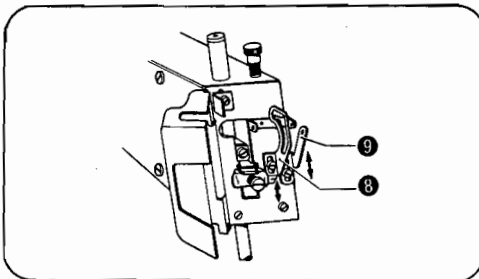
In case of five-thread



4. Thread tension

Thread tension may require change depending on fabrics and threads used, bight, stitch length, the position of each thread take-up, and the position of the thread guides.

If necessary, adjust as mentioned below.



1. Adjusting the overedge stitch needle thread take-up.

To increase the thread tension, lower needle thread take-up ⑧.

To decrease it, raise the thread take-up. The center position in the adjustable range is standard.

2. Adjusting the double-chain stitch needle thread guide.

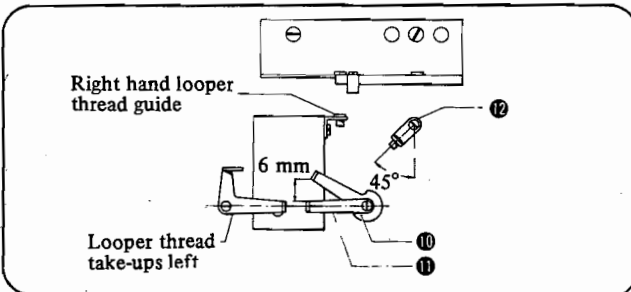
Raise double-chain stitch needle thread guide ⑨ to increase the needle thread tension.

Or lower it to decrease the tension.

The standard needle thread tension is obtained when the guide is in the center stitch position.

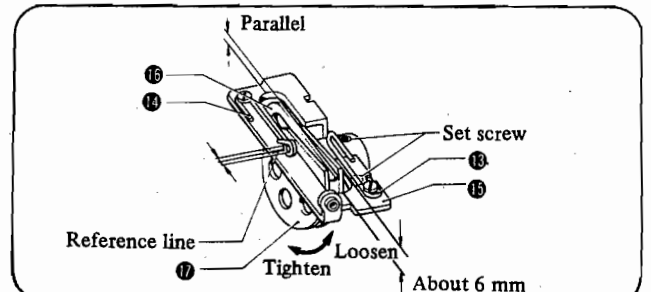
Use the thread take-up for two-thread (A) or for three-thread (B) as appropriate to your sewing purpose.

3. Adjusting the overedge stitch looper thread take-up and thread guide.



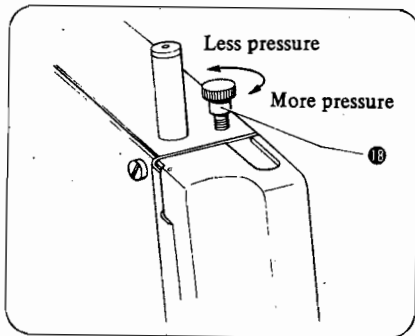
- (1) The above figure shows the standard positions of the looper thread take-ups and each thread guide when the needle bar is up highest.
- (2) More thread will be fed when looper thread take-ups right ⑩, ⑪ are raised; and less thread when they are lowered.
- (3) More thread will be fed when left hand looper thread guide ⑫ is moved to the left (more angle); and less thread when it is moved to the right (less angle).

4. Adjusting the double-chain stitch thread take-up and thread guide.



- (1) Thread take-up thread guides, right ⑬ and left ⑭, must be positioned symmetrically in the thread take-up thread guide hole with the reference line on thread take-up holder ⑮ in the center.
- (2) Thread handler ⑯ must be positioned parallel to the thread take-up holder.
- (3) Adjust the timing of double-chain stitch thread take-up assembly ⑰ to pull back the looper thread when the needle bar is in the highest position.
(The height of the double-chain stitch thread take-up assembly from the thread take-up holder is about 6 mm.)
- (4) The looper thread loosens when the double-chain stitch thread take-up assembly is advanced (turned counter-clockwise), and tightens when it is delayed (turned clockwise).

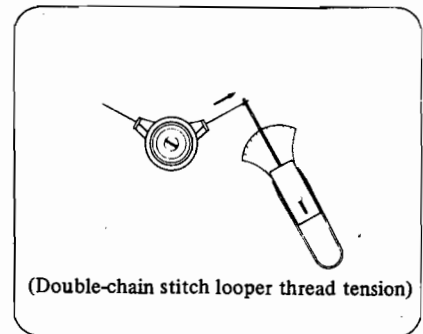
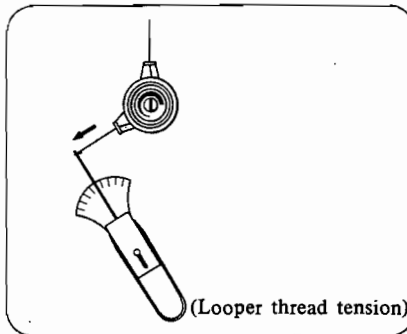
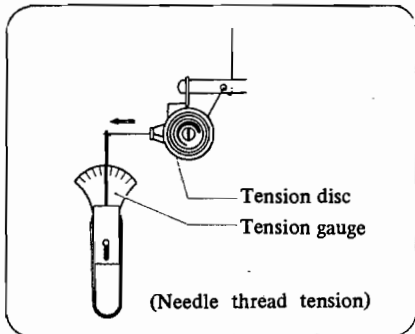
5. Presser foot pressure adjustment



(1) Adjust the presser foot pressure with presser foot adjusting screw 18.

6. Thread tension

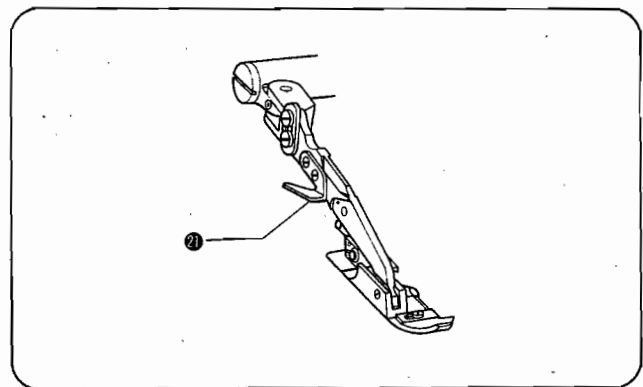
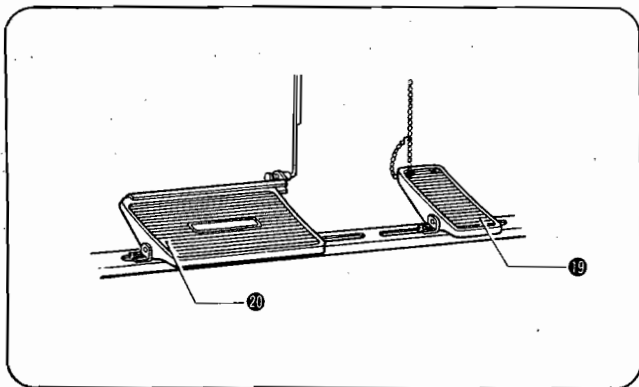
Measure the thread tension as shown at below.



Adjust the tension of each thread by referring to the table below. (In grams)

Fabrics	Thread		Double-chain stitch needle thread tension	Double-chain stitch looper thread tension	Overedge needle thread tension	Right hand looper thread tension	Left hand looper thread tension
	Kind	Size					
Broadcloth	Cotton	#80	20 ~ 50	5 ~ 15	40 ~ 90	10 ~ 25	8 ~ 20
	Dacron	#80	15 ~ 45	5 ~ 10	30 ~ 80	8 ~ 20	5 ~ 15
Jersey	Needle=Dacron Looper=Textured nylon yarn	#50 110/2 denier	25 ~ 60	8 ~ 20	25 ~ 50	5 ~ 15	8 ~ 20
Gabardine	Cotton	#50	35 ~ 60	6 ~ 15	50 ~ 100	7 ~ 20	10 ~ 30
Denim	Cotton	#30	80 ~ 110	10 ~ 20	70 ~ 150	10 ~ 25	15 ~ 30

5. How to sew

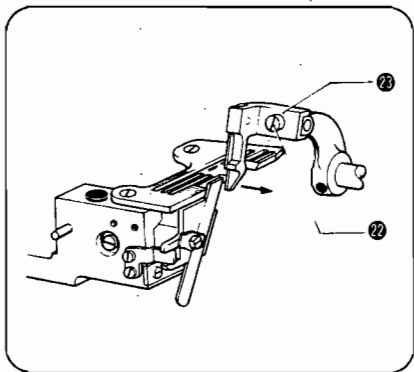


- (1) Press the push power switch ON.
- (2) Depress presser bar lifter pedal 19, place a small part of the work under the presser foot, and release the presser bar lifter pedal.
- (3) When treadle 20 is depressed, the work will be fed and sewn.
- (4) After sewing, run the machine without the work until about 5 or 6 cm of thread is out, and cut the trimming knife 21 by pulling the thread toward yourself.

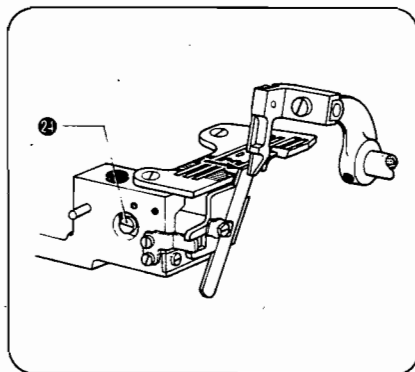
6. Bight adjustment

Since bight depends on cloth trimming width and the width of the throat plate's chain off finger, cloth trimming width must be changed at the same time in case of changing bight by more than 1 mm.

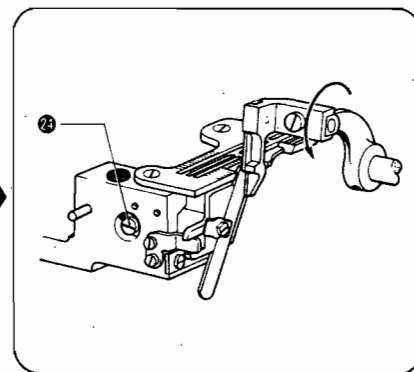
1. To increase bight



- (1) Loosen movable knife holder set screw 22, move knife holder 23 to right as much as necessary, and retighten the set screw 22 securely.

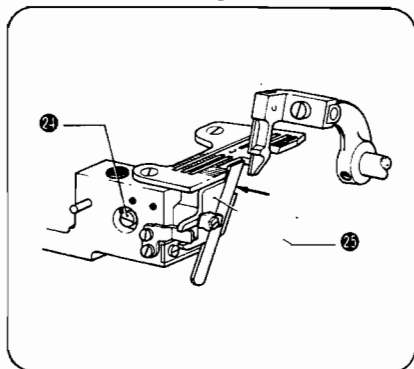


- (2) Loosen stationary knife holder set screw 24, and make the stationary knife pushed against the movable knife by the stationary knife holder spring.

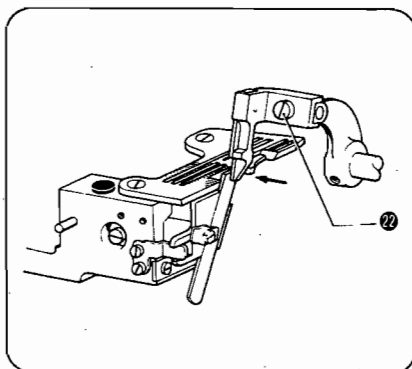


- (3) Turn the pulley until the movable knife close to its lowest position and retighten the stationary knife holder set screw 24.

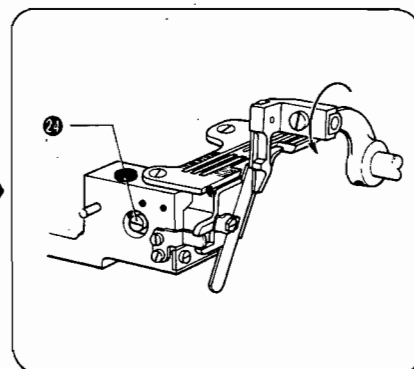
2. To decrease bight



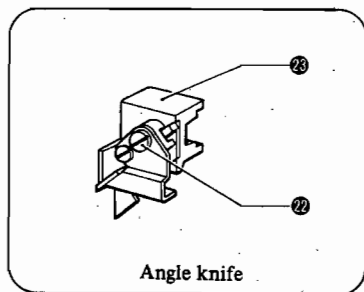
- (1) Loosen the stationary knife holder set screw 24, move knife holder 25 to left as much as necessary, and temporarily tighten the set screw 24.



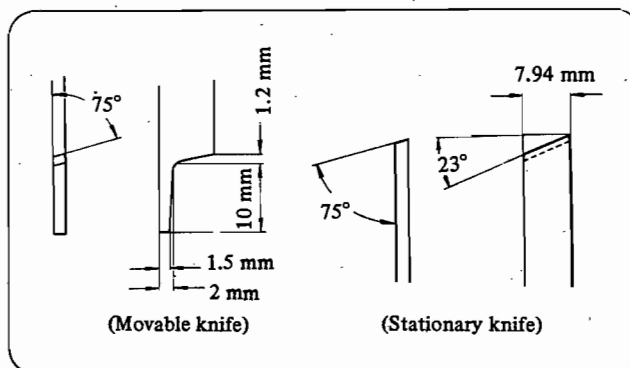
- (2) Loosen the movable knife holder set screw 22, move the knife holder until the movable knife contacts the stationary knife, and retighten the set screw 22 securely.



- (3) Loosen temporarily tightened set screw 24, make sure that the stationary knife is pushed against the movable knife, turn the pulley until the movable knife close to its lowest position, and retighten set screw 24.



※ In case of angle knife, please unfasten screw 22 and do same adjustment.



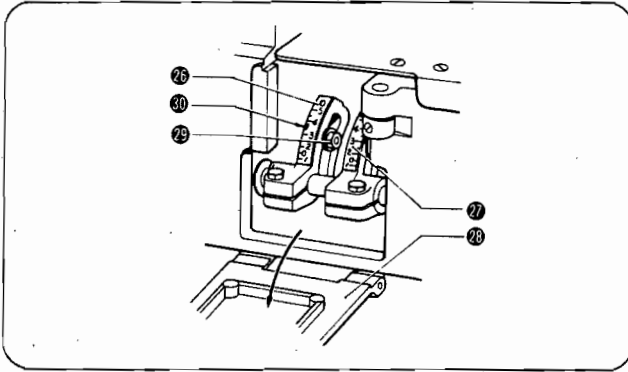
Caution:

If the knife cutting performance has dropped, sharpen the movable knife or stationary knife as shown in right.

7. Stitch length and differential feed adjustment

The numerals on the scales of main feed arm 26 and differential feed arm 27 indicate stitch length in millimeters, but actual stitch length varies with the kind and thickness of the material and the differential feed.

1. Adjusting stitch length



(1) A desired stitch length can be selected by means of the scale on main feed arm 26, which can be adjusted as follows:

- (a) Pull and open feed mechanism cover B 28 on the back of the machine.
- (b) Loosen nut 29.
- (c) Move feed link indicator plate 30 until its red mark is in line with that number on the scale which represents your desired stitch length.
- (d) Retighten nut 29 securely.

(2) Adjust the scale on differential feed arm 27 in the same way as the scale on main feed arm 26.

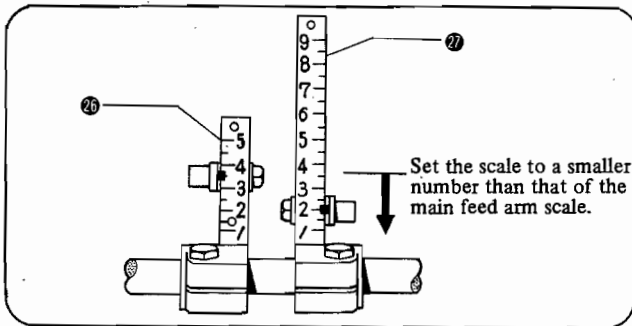
Caution:

If the main feed arm 26 and differential feed arm 27 are set to any scale figure larger than those shown at right, the feed dogs will hit the edges of the slots in the throat plate.

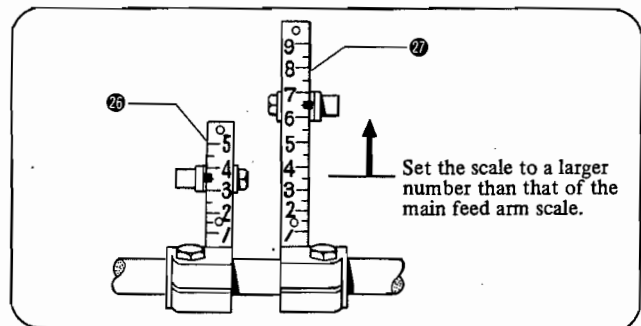
Specifications	Feed arm	Main feed arm	Differential feed arm
Run stitching Denim		3.6 mm	6.5 mm
Ruffler		3.3 mm	9.0 mm
Bulky		2.5 mm	9.0 mm

2. Adjusting the differential feed

(The figures below apply to the case of the maximum stitch length in run stitching.)



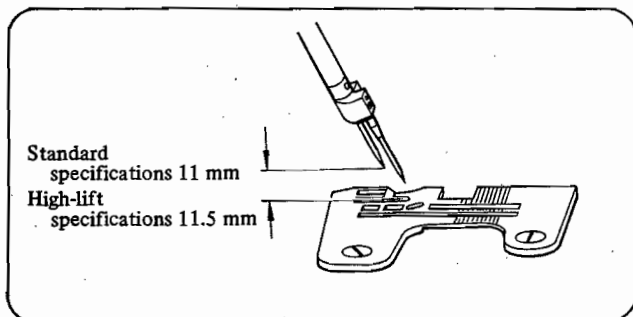
- (1) In case of stretch sewing
Set the scale on differential feed arm 27 to a smaller number than that of the scale on main feed arm 26.



- (2) In case of gather sewing
Set the scale on differential feed arm 27 to a larger number than that of the scale on main feed arm 26.

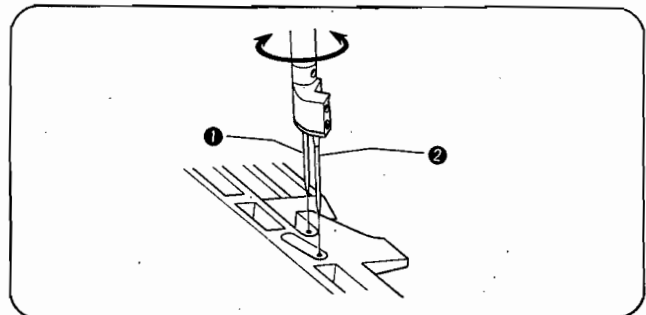
D. STANDARD ADJUSTMENTS

1. Left hand looper and needle bar adjustment

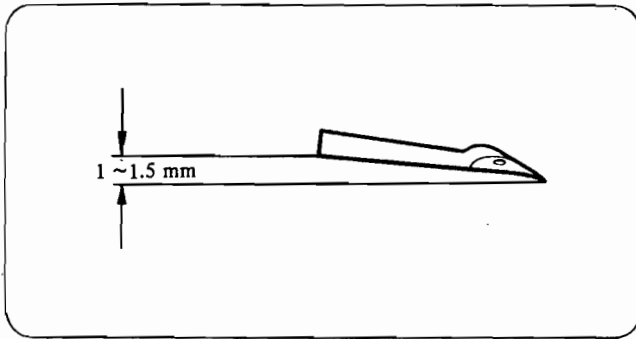


- (1) In case of sewing machines made to the standard specifications, adjust the distance between the needle point and the top of the throat plate to 11 mm when the needle is up highest.

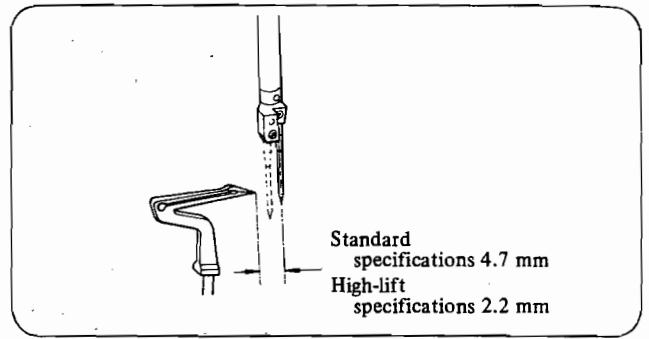
The sewing machine of the high-lift specifications must be adjusted to a distance of 11.5 mm between them.



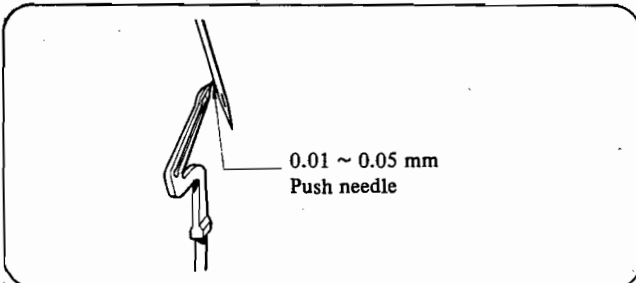
- ※ Turn the needle bar about overedge-needle 1 until double-chain stitch needle 2 is in line with the center of the hole in the throat plate.



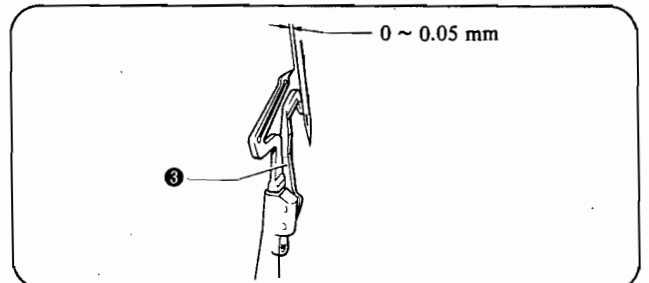
(2) Tilt the left hand looper by 1 ~ 1.5 mm, insert it all the way into the left hand looper holder, and install it.



(3) In case of sewing machine made to the standard specifications, adjust the distance between the left hand looper point and the needle center to 4.7 mm when the left hand looper is at the left-most position. The sewing machine of the high-lift specifications must be adjusted to a distance of 2.2 mm between them.

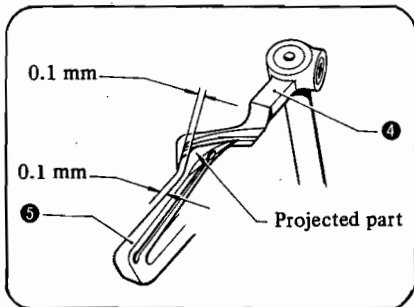


(4) With the point of the left hand looper in line with the center of the needle, make an adjustment so that the point of the left hand looper will push the needle 0.01 ~ 0.05 mm (i.e., slightly contact the needle) in the upward travel of the needle.

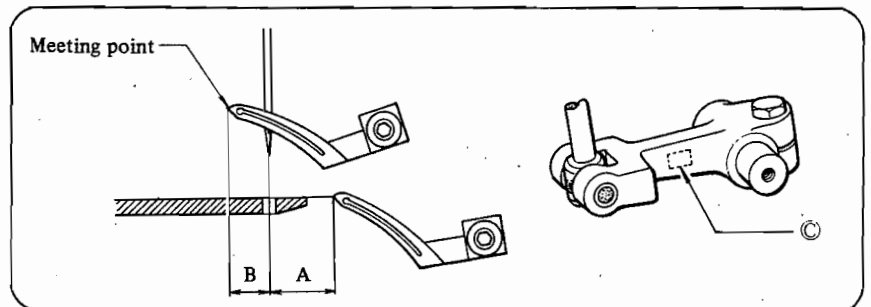


(5) Foregoing the condition of (4), push the needle with movable needle guard ③ until there is a clearance of 0 ~ 0.05 mm between the needle and the point of the left hand looper.

2. Right hand looper adjustment

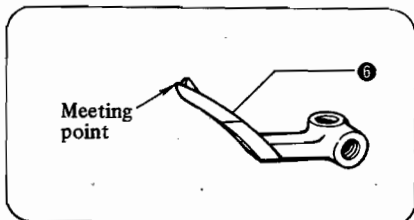


(1) Make an adjustment so that, when right hand looper ④ meets left hand looper ⑤, the point of the right hand looper will pass clear of the left hand looper about 0.1 mm below its projected part.



(2) Select meeting measurements from the table below.

There are right hand loopers: Standard type, high-lift type.



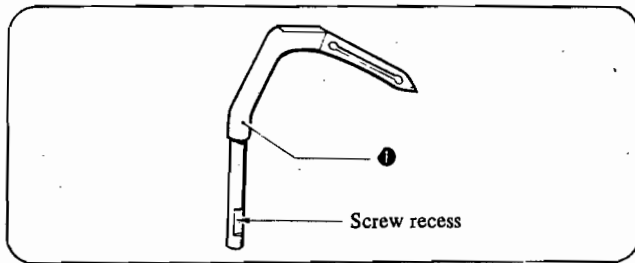
(3) The meeting measurements of spreader (for two-thread) ⑥ are the same as those of the right hand looper.

(In millimeters)

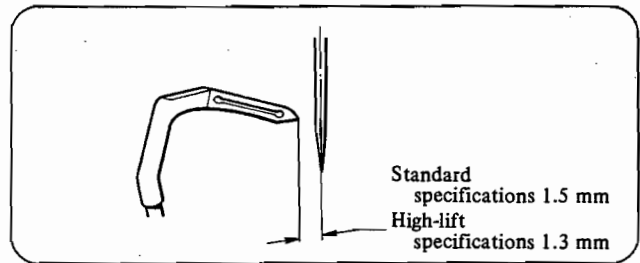
Spec.	Standard	High-lift
A	7.2	8.2
B	5.0	5.0

※ Check part ③ on the right hand looper arm and see whether the machine is for standard use (S) or high-lift use (H).

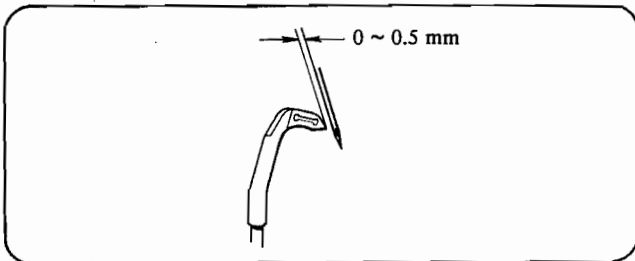
3. Double-chain stitch looper adjustment



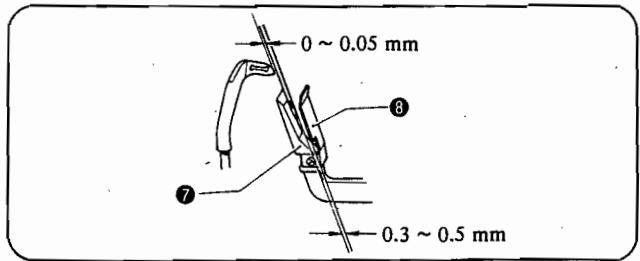
(1) Install the double-chain stitch looper ① by inserting it all the way into the double-chain stitch looper holder. The inclination of the looper depends on the screw recess.



(2) In case of sewing machines made to the standard specifications, adjust the distance from the looper point to the center of the needle to 1.5 mm when the double-chain stitch looper is at the left-most position. The sewing machine of the high-lift specifications must be adjusted to a distance of 1.3 mm between them.

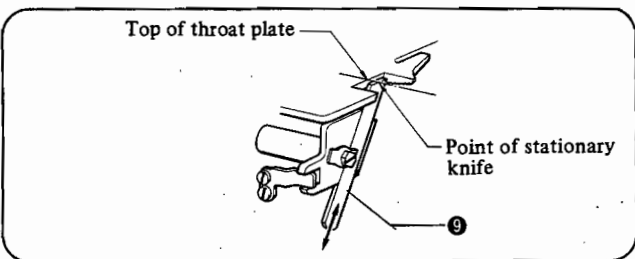


(3) Adjust the clearance between the point of the double-chain stitch looper and the needle to somewhere from 0 ~ 0.05 mm when the double-chain stitch looper point comes to the center of the needle during the needle's rising process.
(If stitches skip, the double-chain stitch looper point must be so adjusted as to contact the needle 0.05 ~ 0.1 mm deep.)



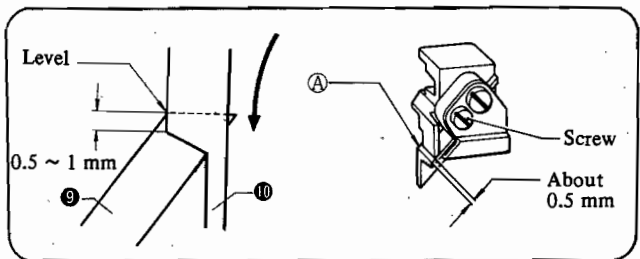
(4) Foregoing the condition of (3), push the needle with chain stitch needle guard B ⑦ until there is a clearance of 0 ~ 0.05 mm between the needle and the point of the double-chain stitch looper. Adjust the clearance between the needle and chain stitch needle guard F ⑧ to 0.3 ~ 0.5 mm.

4. Knives adjustment

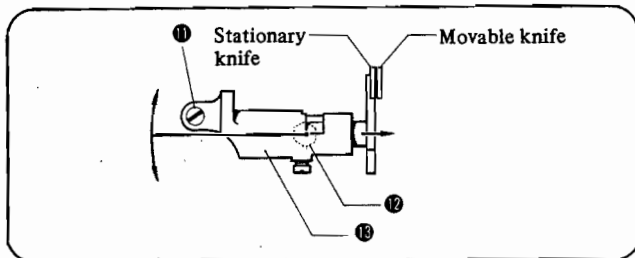


(1) Adjusting the height of the stationary knife ⑨ until the point of the stationary knife is flush with the top of the throat plate.

☆ In case of angle knife, please unfasten screw and adjust ① portion to be about 0.5 mm in length.



(2) Adjust the height of movable knife ⑩ so that, when the movable knife is lowered to its lowest position, it will engage stationary knife ⑨ 0.5 ~ 1 mm deep. Also align the stationary knife corner with the end face of the movable knife.

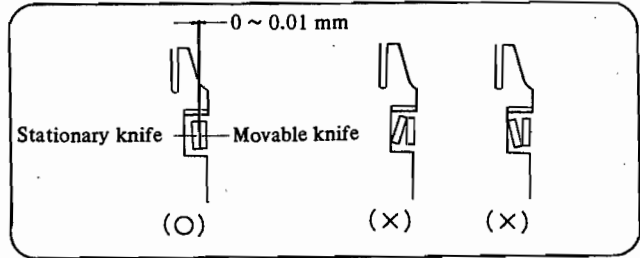


(3) Adjust the stationary knife angle in the following order.

(a) Loosen set screw ⑪ and screw ⑫.

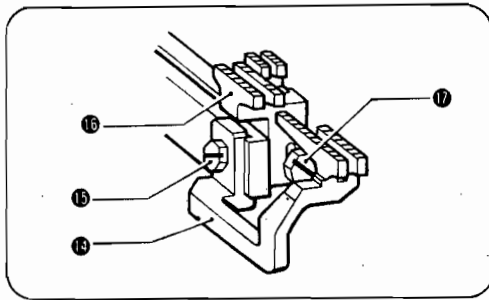
(b) Turn stationary knife holder support ⑬ about screw ⑫ until there is a clearance of about 0 ~ 0.01 mm in the forward direction.

(c) Retighten set screw ⑪ and screw ⑫ securely.



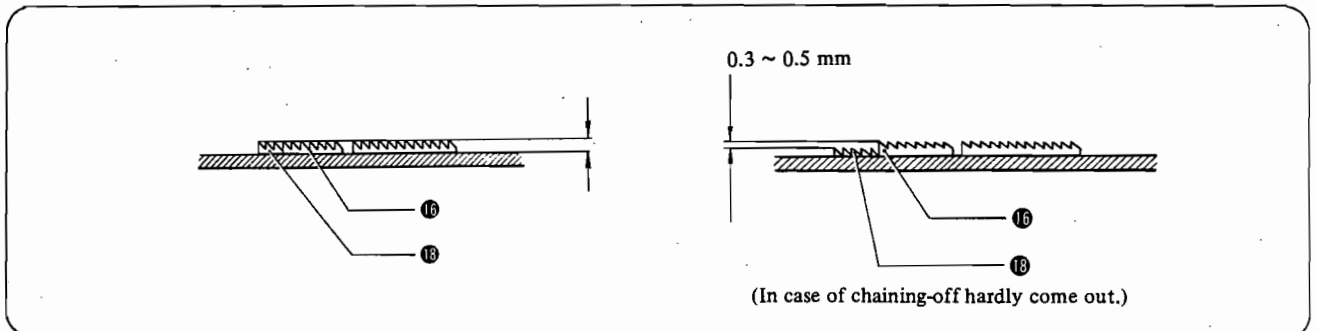
Caution:

The above-mentioned adjustment is not necessary because your machine has already been adjusted on the assembly line. If a readjustment should become necessary, exercise great care not to damage the knives due to excessive engagement of the upper and lower knives.

5. Feed dogs adjustment

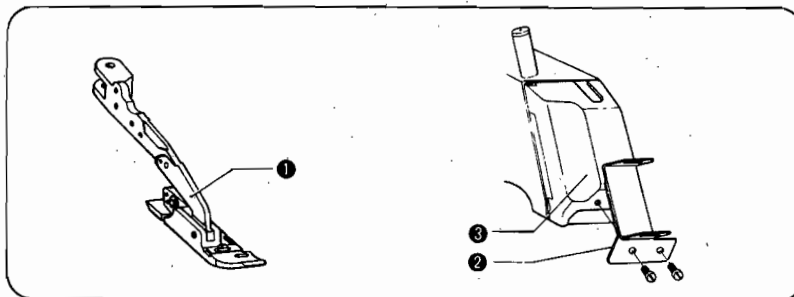
- (1) Loosen screw 15, and raise or lower differential feed dog (front) 14 to the correct height.

Loosen screw 17 and adjust main feed dog (back) 16.

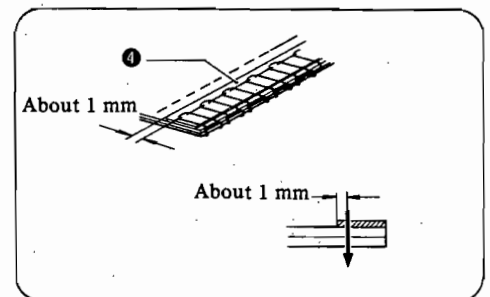


- (2) Turn the pulley until the feed dogs are raised to the highest position, and adjust them to the following height above the top of the throat plate.
- { 1.0 mm for light materials.
 - { 1.3 mm for medium-heavy materials.
 - { 1.5 mm for heavy materials.
- (3) Install chaining-off feed dog 18 at the same height as main feed dog (back) 16.
If free chain stitches hardly come out, lower it as shown in above right.

E. INSTALLATION AND ADJUSTMENT OF ATTACHMENTS

1. Taping

- (1) Replace the presser foot assembly with presser foot for taping 1.
(2) Install tape guide 2 on face plate cover 3.



- (3) Sewn stitches will be as shown at above.
(Sew tape on only in case of serging.)

Caution:

Select a bight so the right edge of tape will not be cut by the knives.

Otherwise, tape may not be sewn on in a satisfactory way.

TROUBLESHOOTING GUIDE

Trouble	Cause	Remedy	Page
Thread break	Wrong threading	See paragraph on threading.	5
	Excessive tension disc pressure.	Adjust to proper pressure.	7
	Poor-quality thread.	Use thread of good quality.	5
	Thread is too thick for needle eye.	Use needle of correct size or thread of correct count.	5
	Needle setting incorrectly.	See paragraph on needle installing.	5
	Needle groove and needle eye finished poorly.	Replace with good needle.	5
	Needle, loopers and thread take-ups not positioned properly to one another.	See paragraphs on adjustment of left hand looper vs. needle bar and thread tension.	9 6
	Needle, loopers, throat plate, thread passage have flaws.	Smooth with oil stone or buff.	/
Stitches skip	Wrong threading.	See paragraph on threading.	5
	Excessive tension disc pressure.	Adjust to proper pressure.	7
	Needle setting incorrectly.	See paragraph on setting needle.	5
	Needle point blunt or bent.	Replace with new needle.	5
	Needle, loopers and thread take-ups not positioned properly to one another, or have incorrect clearance.	See paragraphs on adjustment of left hand looper vs. needle bar and thread tension.	9 6
	Needle and needle guard not positioned properly to one another.	See paragraph on adjustment of left hand looper vs. needle bar.	9
	Looper point hangs down.	Correct with oil stone, or replace with new looper.	/

Trouble	Cause	Remedy	Page
Needle break	Needle installed incorrectly.	See paragraph on setting needle.	5
	Needle bent.	Replace with new needle.	5
	Needle and loopers positioned improperly to one another.	See paragraphs on adjustment of left hand looper vs. needle bar and adjustment of right hand looper.	9 10
	Needle and needle guard positioned improperly to one another.	See paragraph on adjustment of left hand looper vs. needle bar.	9
Doesn't work well without cloth. (Overedge sewing)	Wrong threading.	See paragraph on threading.	5
	Excessive thread tension.	Adjust to correct thread tension.	7
	Loopers, thread take-ups, and thread guide not positioned properly to one another.	See paragraph on thread tension.	6
	Main and differential feed dogs not uniform in height.	See paragraph on feed dog adjustment.	12
	Throat plate's chain off finger has flaws.	Smooth with sandpaper and polish with buff.	
Doesn't work well without cloth. (Double-chain stitch sewing)	Wrong threading.	See paragraph on threading.	5
	Tensions of needle and looper threads are too great or too small.	Adjust to correct tensions.	7
	Needle thread guide positioned incorrectly.	See paragraph on adjustment of double-chain stitch needle thread guide.	6
	Wrong timing of double-chain stitch thread take-up assembly.	See paragraph on adjustment of double-chain stitch thread take-up and thread guide.	6
	Main and differential feed dogs are not level with one another.	See paragraph on feed dog adjustment.	12
Poor trimming performance	Movable knife and stationary knife worn.	Sharpen stationary knife; see paragraph on bight adjustment.	8
	Movable and stationary knives installed incorrectly.	See paragraph on knives adjustment.	11

Trouble	Cause	Remedy	Page
Needle makes too large holes in cloth	Needle point blunt.	Replace with new needle.	5
	Needle too big for cloth.	Replace with smaller needle.	5
Improper thread nipping	Wrong threading.	See paragraph on threading.	5
	Thread is too big for needle eye.	Replace with correct needle or thread.	5
	Tension discs don't work right.	Remove dust from between tension discs to let them work smoothly.	/
	Needle, loopers and thread take-ups positioned improperly to one another.	See paragraphs on adjustment of left hand looper vs. needle bar and thread tension.	9 6
Irregular stitches	Wrong threading.	See paragraph on threading.	5
	Thread not uniform in thickness.	Use thread of good quality.	5
	Thread passage defective.	Smooth thread passage.	/
	Thread take-ups and thread guides not positioned properly to one another.	See paragraph on thread tension.	6
	Movable and stationary knives don't cut well.	See paragraph on bight adjustment (Caution).	8
	Stationary knife installed incorrectly.	See paragraph on knives adjustment.	11

Trouble	Cause	Remedy	Page
Excessive wrinkles by sewing	Needle too big.	Select needle suitable to cloth and threads.	5
	Differential feed not adjusted right.	See paragraph on stitch length and differential feed adjustment.	8
	Presser foot pressure incorrect.	Adjust pressure correctly.	7
	Excessive thread tension.	Adjust to correct pressure.	7
	Movable and stationary knives don't cut well.	See paragraph on bight adjustment (Caution).	8
	Trimming width and throat plate's chain off finger not balanced.	Adjust trimming width to throat plate, or replace throat plate.	8
	Feed dogs installed incorrectly.	See paragraphs on presser foot pressure adjustment and feed adjustment.	7 12

SINGER