

INSTRUCTION BOOK

WILLCOX & GIBBS CLASS 500/I & 500/II

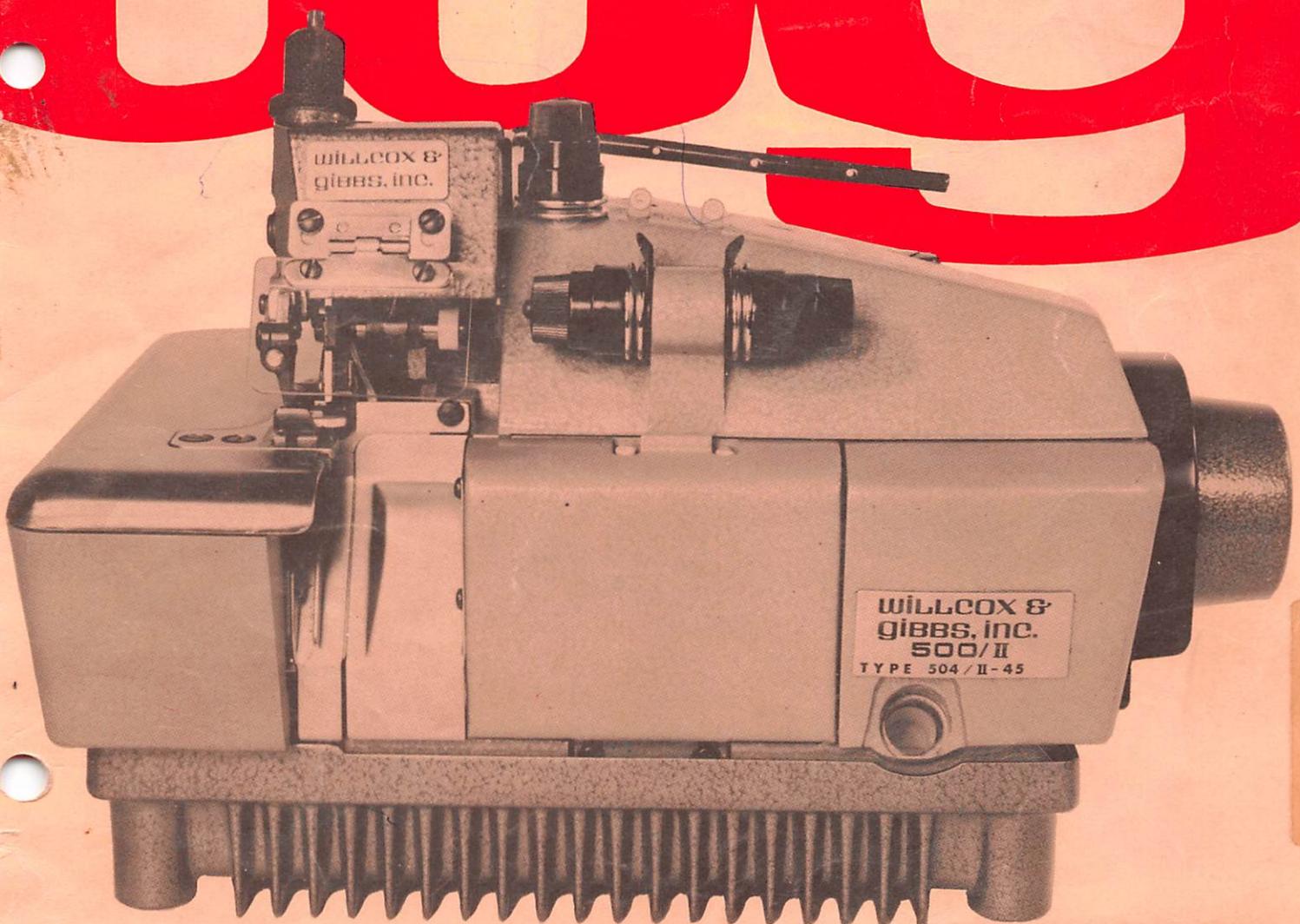
(overlock stitch)

Los Angeles, CA 90021



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# OPERATORS' INSTRUCTION

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## INTRODUCTION

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You are about to operate an overlock machine designed by the people who first introduced the overlock. In this machine you will find all the features to assist you, as the operator, to enjoy the easier handling and faster sewing that will help you increase your production. It is easy to thread, feeds smoothly, has automatic lubrication, and runs quietly. The Willcox & Gibbs class 500/I & II machines are the machines known as "THE OPERATOR'S FAVORITES".

## HOW TO CLEAN YOUR MACHINE

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Cleaning the machine is an important operation. It is not necessary to remove any parts. Merely release the foot and swing it out to the left. Swing out the covers and remove all the collected lint from around the loopers, feed slots, and under the needle plate. Blow out any loose lint or use a lint brush. Replace covers and return foot to the sewing position.

## DRIVING MOTOR, PULLEY AND BELTING

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Table 1

Each machine should use a motor and belt of the following specifications:

1. Clutch motor: 3 phase; 2 pole; 400 watts (1/2 HP) is recommended.
2. Motor speed is approximately 2,900 r.p.m. for 50 Hz or 3,500 r.p.m. for 60 Hz.
3. Belting should be V belt, Type M.
4. The relation between machine speed and motor pulley diameter is determined by Table 1.

## LUBRICATION

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Table 2 Fig. 1, 2, 3

**CAUTION:** Oil was drained from the machine when shipped.  
Refill with oil before operating.

The 500/I & II features fully automatic lubrication with a concealed forced air cooling system. Oil is pressurized by a pump to the internal surfaces of the connections.

A new machine should be run at least four weeks at a speed not to exceed 5,000 s.p.m.

At the end of four weeks, original oil should be drained out and replaced.

Operational speed after four weeks run-in may be 7,000 s.p.m.

Operational speed depends upon machine model and operation being performed.

Life time of machine depends on quality oil used. For lubricant for 500/I & II, use oil as specified in Table 2.

Use recommended type oil only.

### Changing oil

1. Remove the machine from its stand and set it on a table.
2. Remove drain plug ① and drain oil from the machine.
3. Replace drain plug ① and return the machine to its stand.
4. Remove filler plug ②.
5. Pour fresh oil into reservoir (700cc Capacity) using funnel supplied with accessories, until oil reaches upper line of gauge ③.
6. Replace filler plug ②.
7. Run machine and check oil circulation at oil splash sight window ④.
8. Oil level should be kept between two lines on gauge ③.
9. Change oil entirely every three months.

### OIL SCREEN FILTER

Filter ⑧ should be kept clean. Lubrication oil is filtered and delivered to all frictional surfaces. Clogging of this filter may cause lack of lubrication and accidental seizure of parts. Check and clean filter ⑧ every three months, or if necessary, replace with a new filter when:

Oil jet in window ④ is restricted or weak, or oil contains foam or debris.

### Changing filter

1. Drain oil from the machine.
2. Remove bolts ⑤ and oil pan ⑥.
3. Remove screws ⑦ and filter ⑧.
4. Clean filter ⑧ with petrol and blow it with low pressure air.
5. Replace filter ⑧ and tighten screws ⑦.
6. Replace oil pan ⑥ and tighten bolts ⑤.
7. Fill reservoir with oil on a level of upper line of gauge ③.

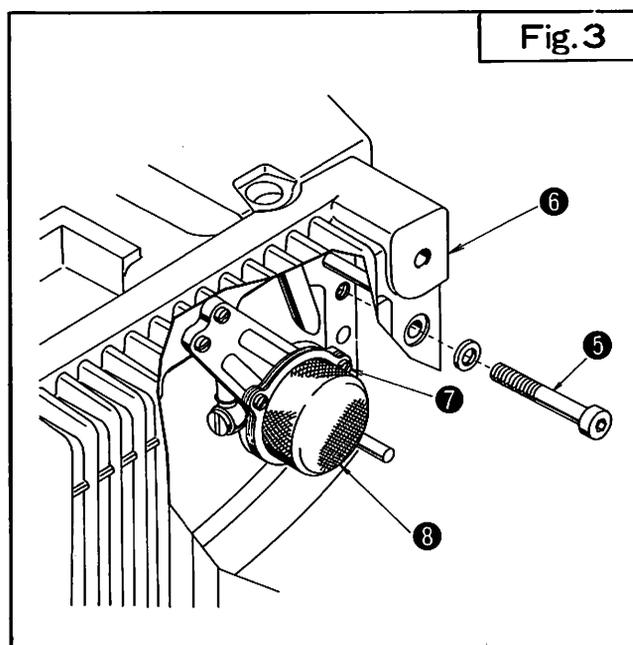
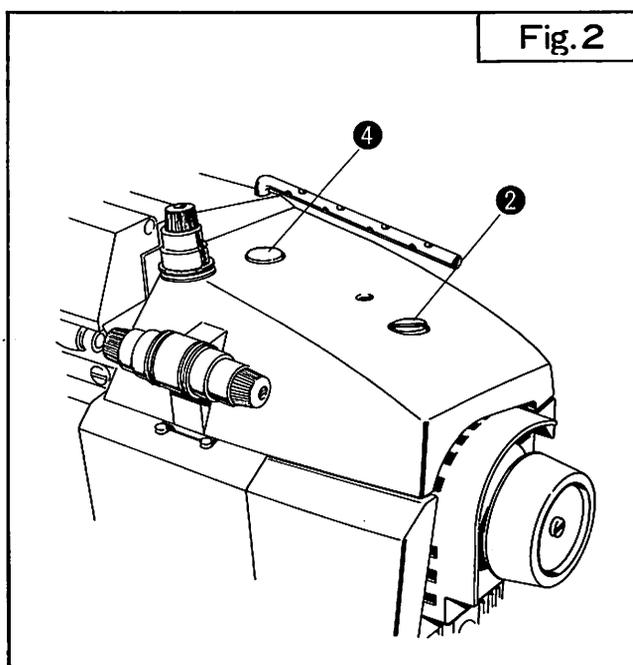
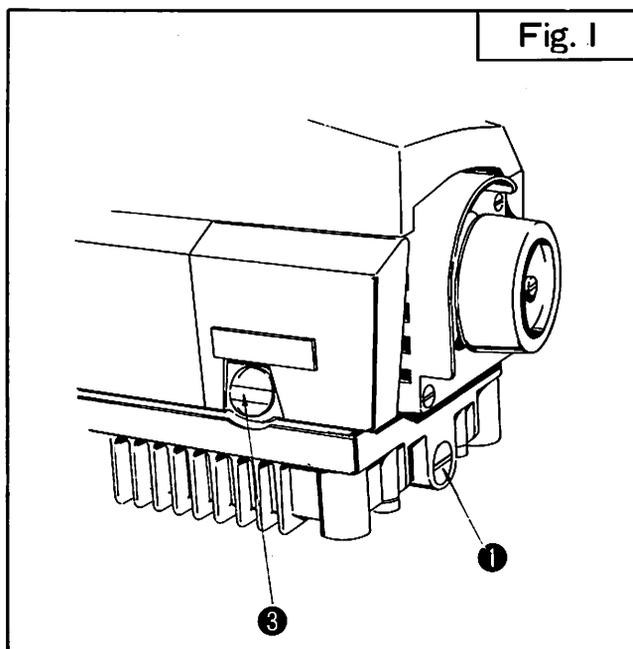
MACHINE SPEED (S.P.M.)	50 Hz MOTOR PULLEY DIAMETER		
	MM	INCHES	PULLEY SIZE in U.S.A.
4,600	95	3-3/4	636
5,000	105	4-1/8	641
5,300	110	4-3/8	643
5,500	115	4-1/2	644
5,800	120	4-3/4	646
6,000	125	4-7/8	647
6,300	130	5-1/8	651
6,700	140	5-1/2	654
7,000	145	5-3/4	656

MACHINE SPEED (S.P.M.)	60 Hz MOTOR PULLEY DIAMETER		
	MM	INCHES	PULLEY SIZE in U.S.A.
4,600	80	3-1/8	631
5,000	85	3-3/8	633
5,300	90	3-5/8	635
5,500	95	3-3/4	636
5,800	100	4	640
6,000	105	4-1/8	641
6,300	110	4-3/8	643
6,700	115	4-1/2	644
7,000	120	4-3/4	646

Table 1

Note 1: Machine pulley diameter is 60mm (2.36").

Note 2: Motor pulley diameter should be measured in its outer diameter.



		Brand "A"	Brand "B"
Kinematic Viscosity (centistokes)	100°F	19.01	14.57
	210°F	4.04	3.57
Viscosity Index	VI (A)	130.0	147.5
	VI (B)	123.5	142.5
Pour Point (°F)		-59.0	-63.5
Load Carrying Capacity (kg/cm <sup>2</sup> )		more than 12 (170 psi.)	more than 12 (170 psi.)

Table 2

# THREADING YOUR MACHINE

Table 3, 4 Fig. 4, 5, 6, 7, 8, 9, 10

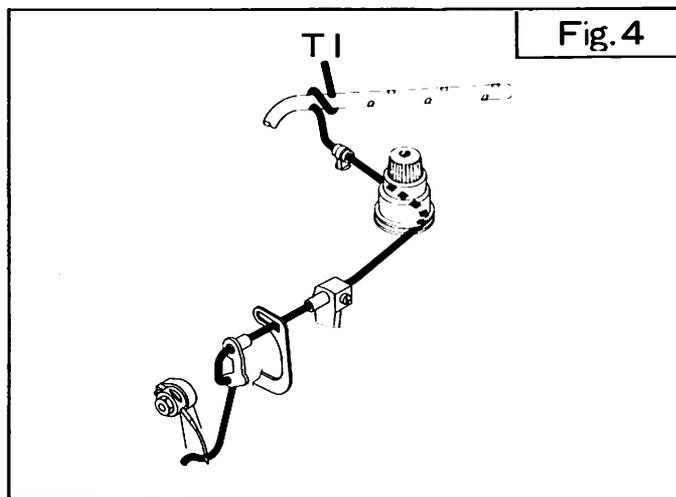
When a machine is received, note that it has been threaded correctly. The simplest way to rethread it is to tie the new threads to those already in the machine and pull the new threads through, making sure that the knots will go through the looper eyes and needles.

In case the machine requires a complete rethreading, refer to Threading Diagrams Fig. 4 to 10, Table 3 and 4.

500/I Fig. 4, 5, 6, 7, 8

Thread Federal stitch	Right needle	Left needle	Right looper	Left looper
503	T1	None	Non	T4
504	T1	None	T5	T6
512	T3	T2	T7	T8
514	T3	T2	T5	T6

Table 3



# REGULATING THREAD TENSION

The amount of tension required varies with type of material, size and type of thread, etc. Adjust individual thread tensions as follows.

To increase tension – Turn nut clockwise.

To decrease tension – Turn nut counter-clockwise.

Tension on thread should be just enough to secure proper stitch formation.

Normally, you should have more tension on the needle threads and less tension on the looper threads.

500/II Fig. 4, 5, 9, 10

Thread Federal stitch	Right needle	Left needle	Right looper	Left looper
503	T1	None	Non	T9
504	T1	None	T10	T11
512	T3	T2	T10	T11
514	T3	T2	T10	T11

Table 4

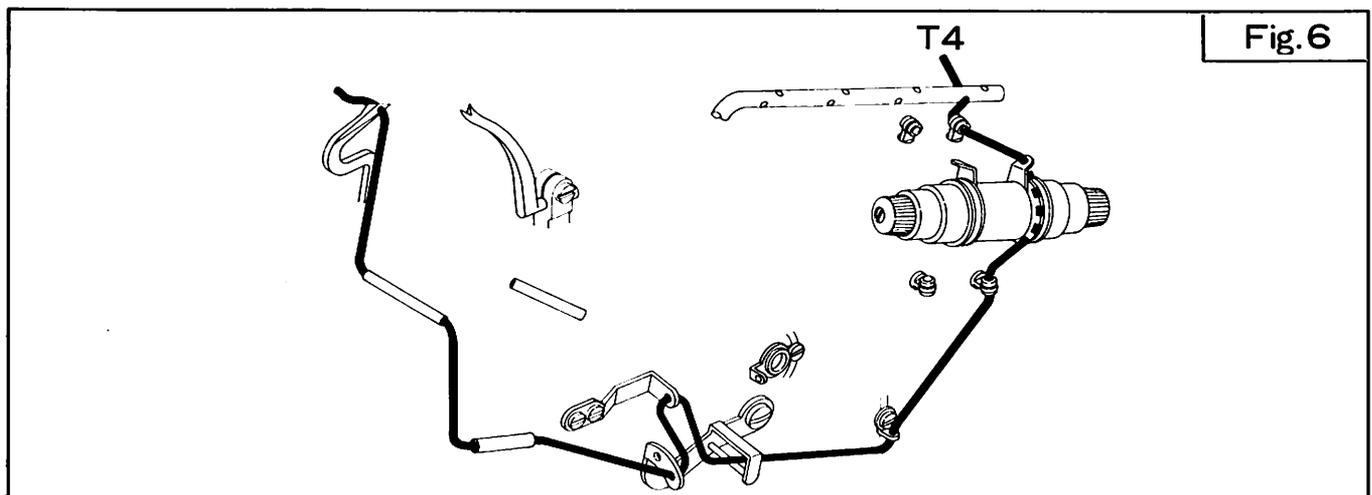
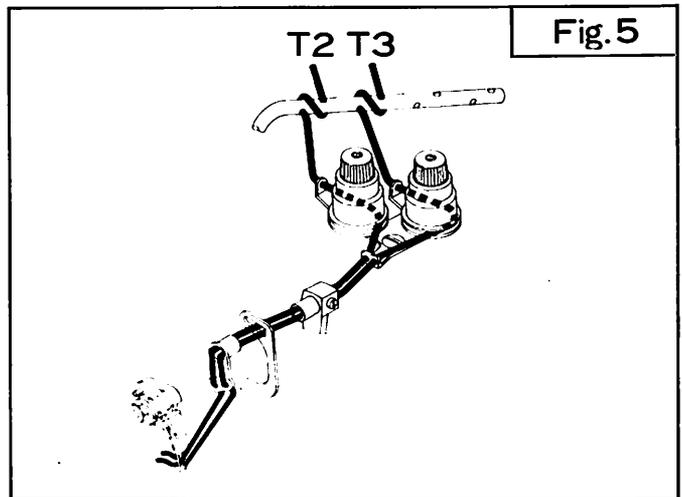


Fig. 7

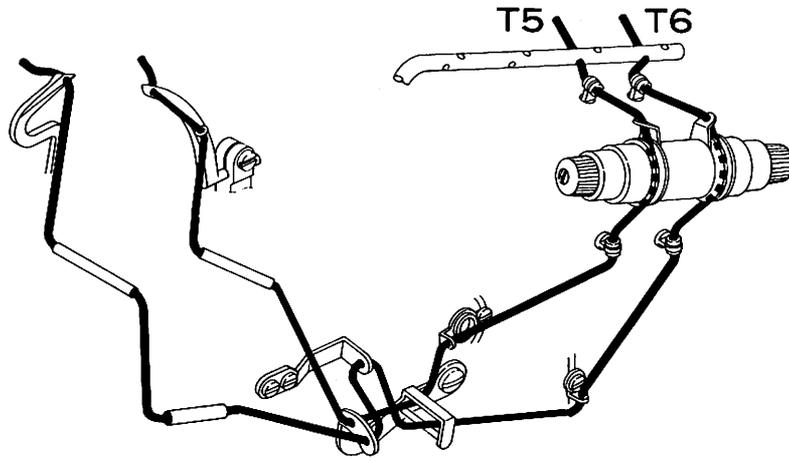


Fig. 8

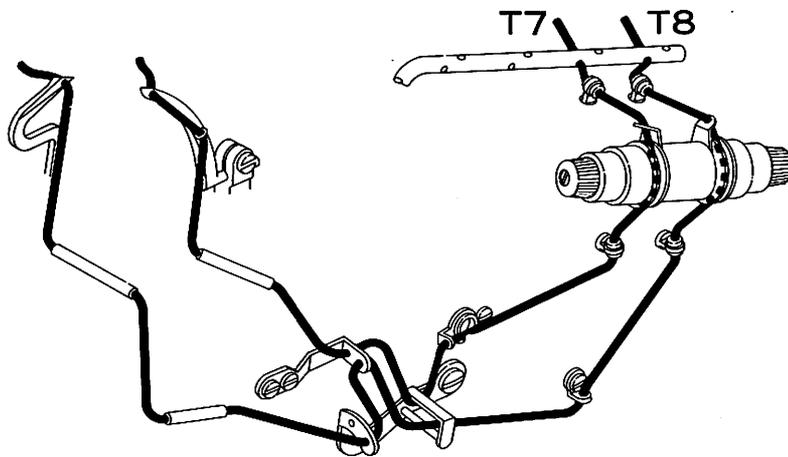


Fig. 9

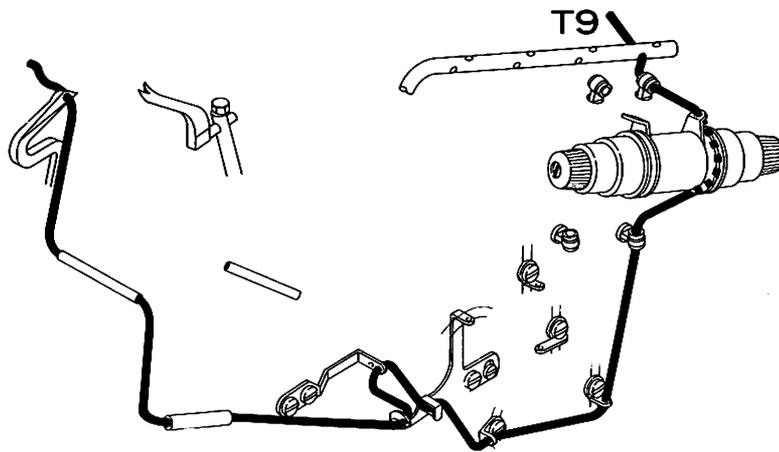
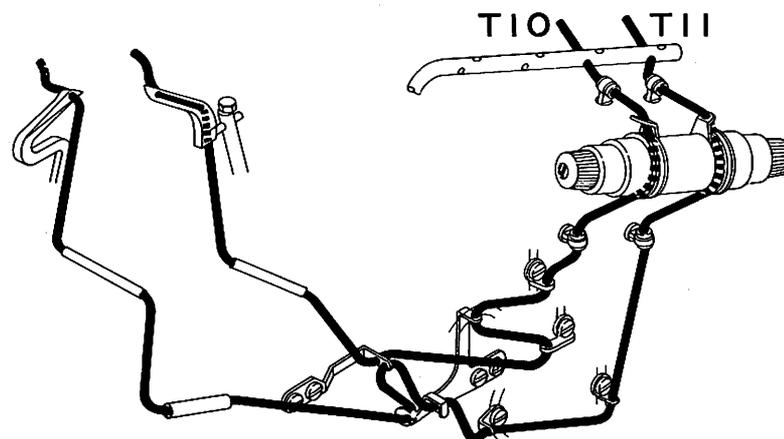


Fig. 10



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## PRESSURE OF PRESSER FOOT

Fig. 11

Pressure of presser foot is regulated by means of thumb screw ①. Pressure on presser foot should be just enough to feed material and obtain proper stitch formation. Too much pressure may spoil material and give it more stretch than it needs. Too little pressure may cause uneven feedings or stitches.

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## NEEDLES

Fig. 11, 12

Generally the size of needle should be determined by the size of thread or weight of material to be sewn.

### Changing needles

1. Turn handwheel until needle drive arm ② is at its highest position.
2. Lift up lever ③ and swing presser arm ④ to the left.
3. Loosen nut ⑤ using socket wrench furnished with the machine and remove old needle.
4. Insert new needle in the groove ⑥ of clamp until needle rests against pin ⑦.
5. Tighten nut ⑤ securely.
6. Return arm ④ to the sewing position.
7. Make sure needle descends in the center of the needle hole in needle plate.
8. On two needle machine, be sure to keep shim ⑧ at the right position or between two needles.

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## REGULATING SEAM WIDTH

Fig. 11, 13

1. Lift up lever ③ and swing arm ④ to the left.
2. Turn handwheel until upper knife is at its lowest position.
3. Loosen screw ⑨. Pull thumb nut ⑩ to the left as far as it will go and lightly tighten screw ⑨.
4. Loosen screw ⑪ and move holder ⑫ to the right or left until the desired width is obtained, then tighten screw ⑪.
5. Loosen screw ⑨, then holder ⑬ will return to position by spring action.
6. Tighten screw ⑨.
7. Return arm ④ to the sewing position.

Needle Plates for various seam widths are available. Best results are obtained with use of the proper size Needle Plate for seam width required.

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## REPLACING THE UPPER AND LOWER KNIVES

Fig. 11, 13, 14, 15

### UPPER KNIFE

1. Lift up lever ③ and swing arm ④ to the left.
2. Loosen screw ⑨. Pull nut ⑩ to the left as far as it will go and lightly tighten screw ⑨.
3. Remove screw ⑭ with socket wrench or screwdriver furnished with the machine.
4. Withdraw knife ⑮ downward.
5. Replace with new knife but do not tighten screw ⑭ completely.
6. Turn handwheel until upper knife is at its lowest position. Set upper knife so that its cutting edge overlaps lower knife by 0.5-1.0mm (.020-.039") as shown in Fig. 14.
7. Retighten screw ⑭ securely.
8. Loosen screw ⑨, then holder ⑬ will return to position by spring action.
9. Tighten screw ⑨.
10. Return arm ④ to the sewing position.

### LOWER KNIFE

1. Lift up lever ③ and swing arm ④ to the left.
2. Loosen screw ⑨ and pull nut ⑩ to the left as far as it will go and lightly tighten screw ⑨.
3. Loosen nut ⑩ and withdraw knife downward.
4. Insert new knife into the groove of clamp stud, setting the blade so that the cutting edge is level with the top of needle plate as shown in Fig. 14.
5. Tighten nut ⑩ securely.
6. Loosen screw ⑨, then holder ⑬ will return to position by spring action.
7. Tighten screw ⑨.
8. Return arm ④ to the sewing position.

Knives must be kept sharp. Lower knife may be sharpened by use of a grinder while making sure that the correct angle is maintained as shown in Fig. 15. Upper knife may be sent to our distributors or return to us for sharpening since it is made from a special tungsten carbide alloy material, and must be sharpened by a diamond grinder.

Fig. 11

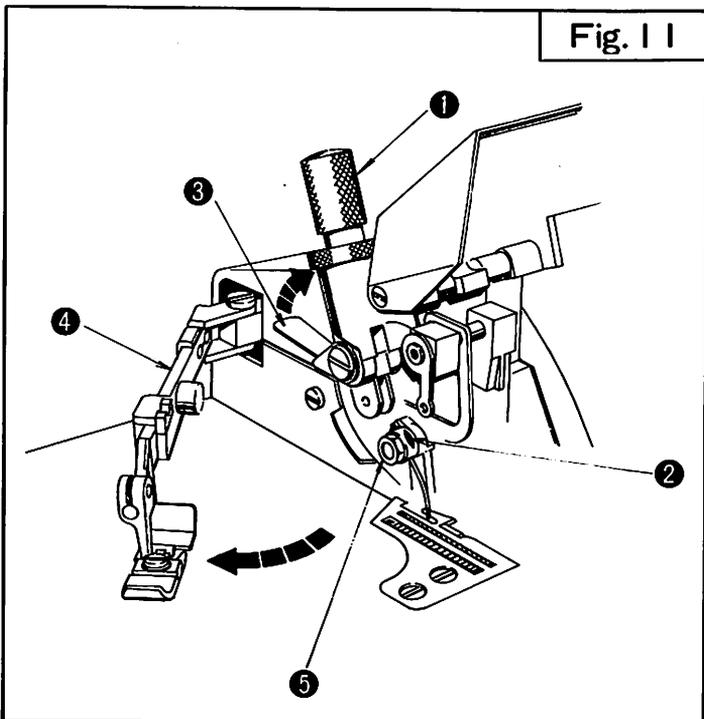


Fig. 14

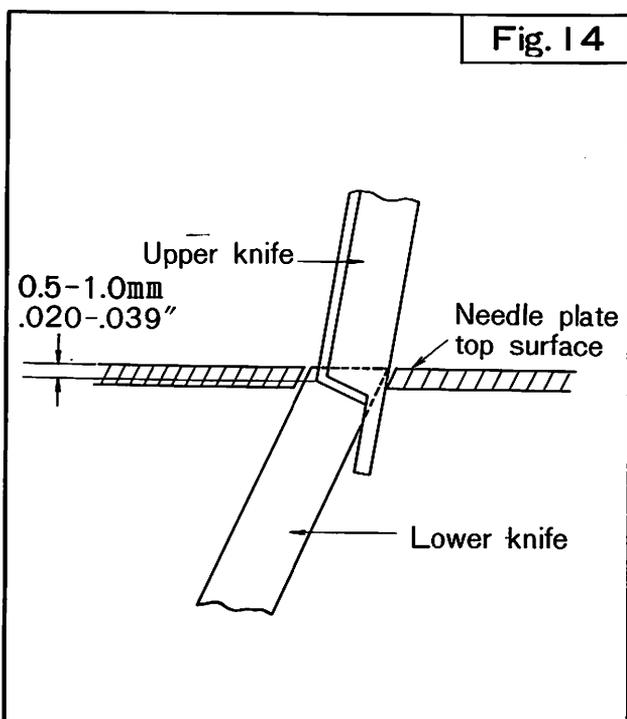


Fig. 12

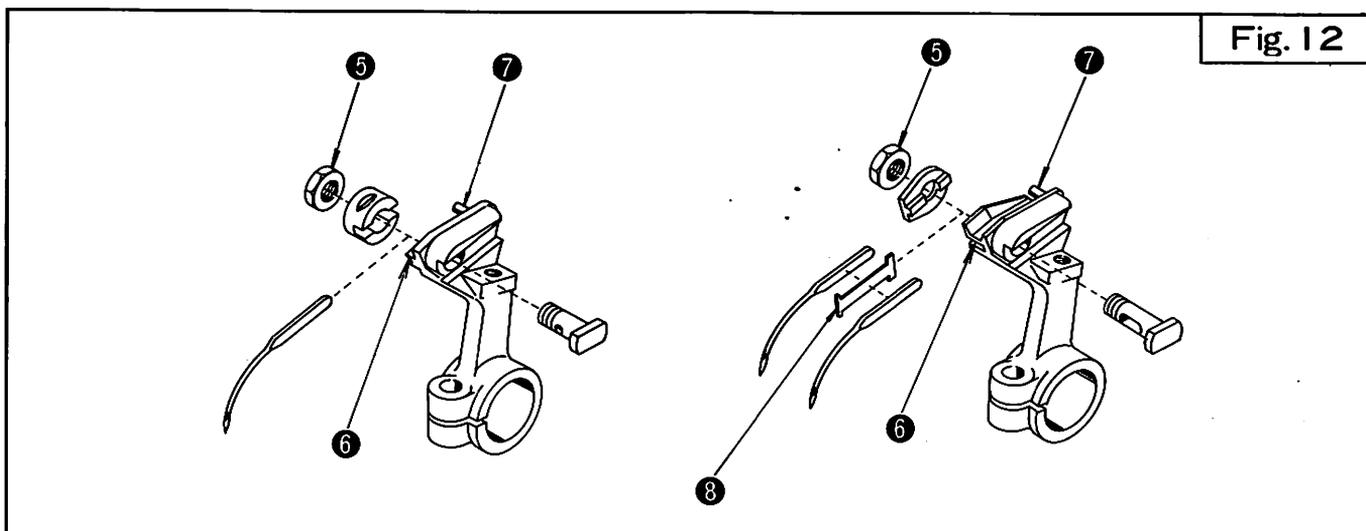


Fig. 13

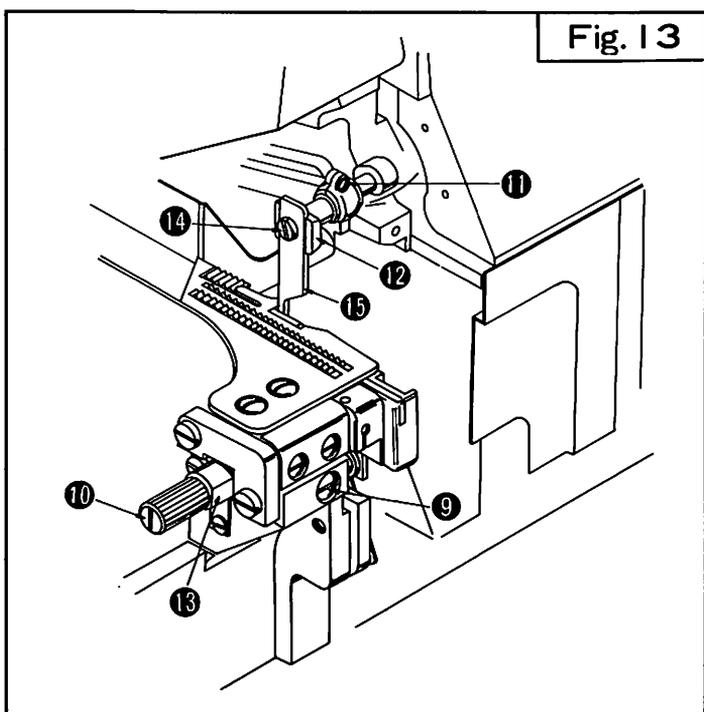
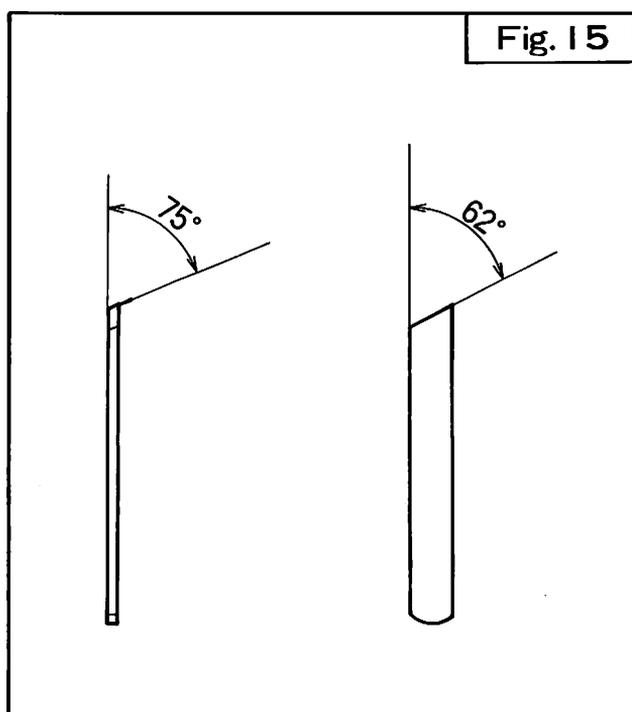


Fig. 15



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## REGULATING STITCH LENGTH

Fig. 16

Stitch length is determined by the combination of main and differential feed eccentrics to be used.

Outer eccentric ⑤ actuates main feed.

Inner eccentric ⑥ actuates differential feed.

The number stamped on feed eccentric indicates the number of stitches per inch.

However, the stitches made may vary more or less depending upon the material.

### Selecting eccentric

When the stamped number of differential feed eccentric (e.g. #8) is smaller than that of main feed eccentric (e.g. #12), material will tend to shrink in stitching.

When the stamped number of differential feed eccentric (e.g. #16) is larger than that of main feed eccentric (e.g. #12), material will tend to stretch in stitching.

### Changing eccentric

1. Swing presser arm, cloth plate and feed mechanism cover to the left.
2. Remove nut ① and washer ② from crankshaft ③.
3. Screw extractor, furnished with the machine, into screw hole ④ of main feed eccentric ⑤ and take it out.
4. Screw extractor into screw hole of differential feed eccentric ⑥ and take it out.
5. Be sure to eccentrics and mating parts are clean. Clean eccentrics in oil to remove all dirt and dust deposits before placing in the machine.
6. Face the extruded portion outward (leftward) and insert differential feed eccentric ⑥ on the crankshaft ③ mating the eccentric groove with the crankshaft key. Use extractor.
7. Face the extruded portion inward (rightward) and insert main feed eccentric ⑤ in the crankshaft ③ mating the groove with the key. Use extractor.
8. Replace washer ② and nut ①.
9. Tighten nut ① securely.
10. Replace covers and return arm to the sewing position.

Feed eccentrics supplied in the machine and in the accessories are listed in the organization charts. Additional eccentrics may be ordered separately.

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## SETTING THE WELT GUIDE

Fig. 17

Welt guide, equipped with models 503/I-25 and 503/II-25, is designed for blindstitch welting or hemming.

1. Set base ⑦ on the machine with screw ⑧.
2. Loosen screw ⑨.
3. Move guide ⑩ by turning screw ⑪ until guide ⑩ is correctly positioned.
4. Tighten screw ⑨ securely.

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## SETTING THE EDGE GUIDE

Fig. 18

Edge guide, equipped with models 503/I-4, 503/I-8, 503/II-4 and 503/II-8, is designed for regulating the width of material to be trimmed or for edge guide when the machine is operated without trimmer.

1. Set holder ⑫ on the machine with screws ⑬.
2. Loosen screw ⑭.
3. Move guide ⑮ to the right or left until proper position is obtained.
4. Tighten screw ⑭ securely.

Fig. 16

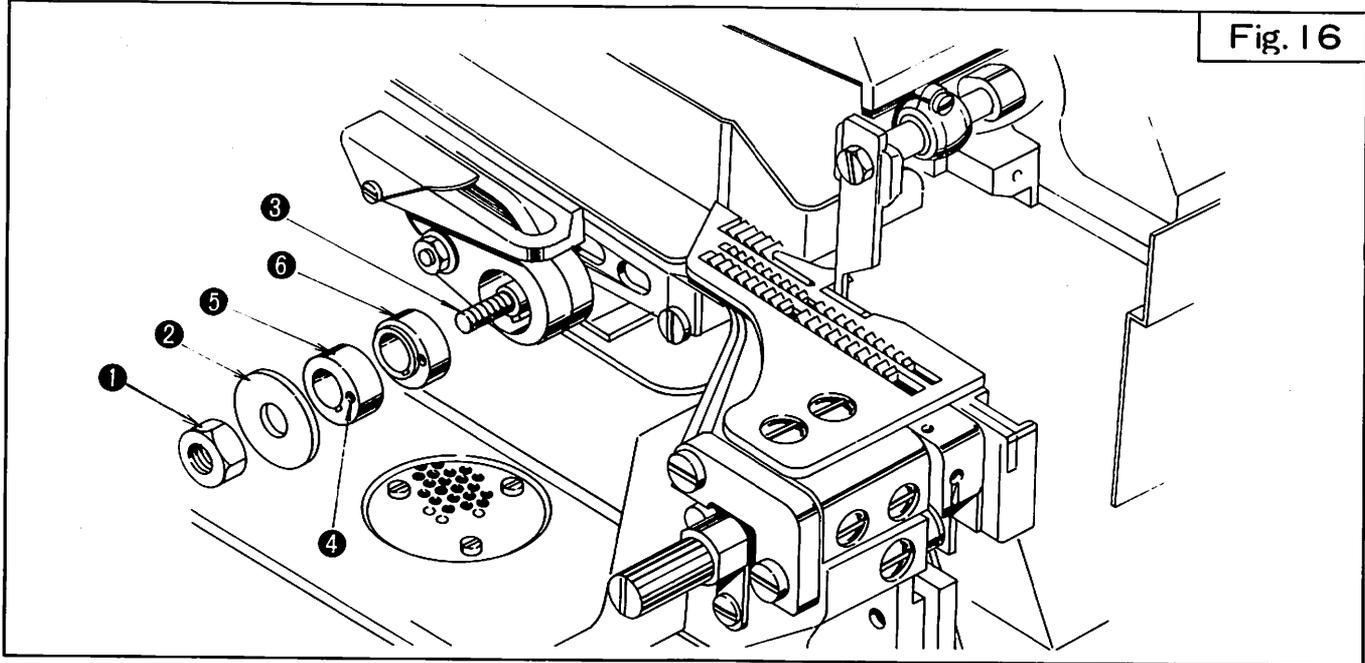


Fig. 17

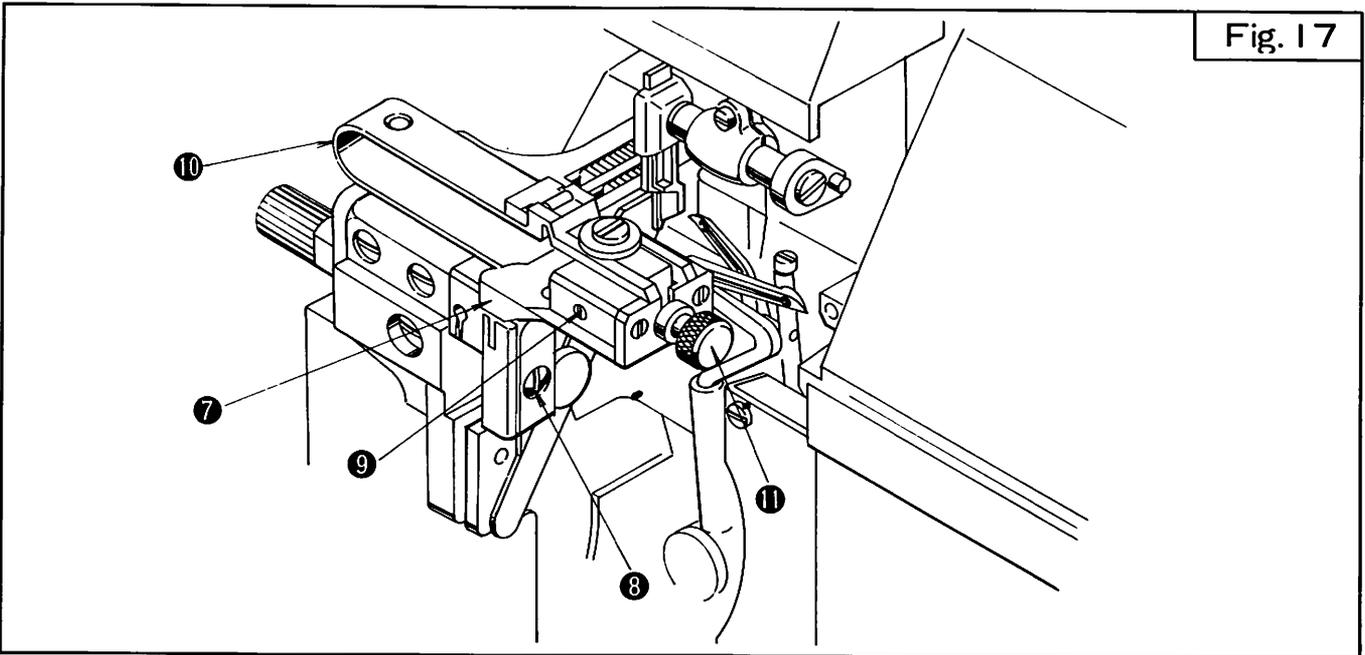
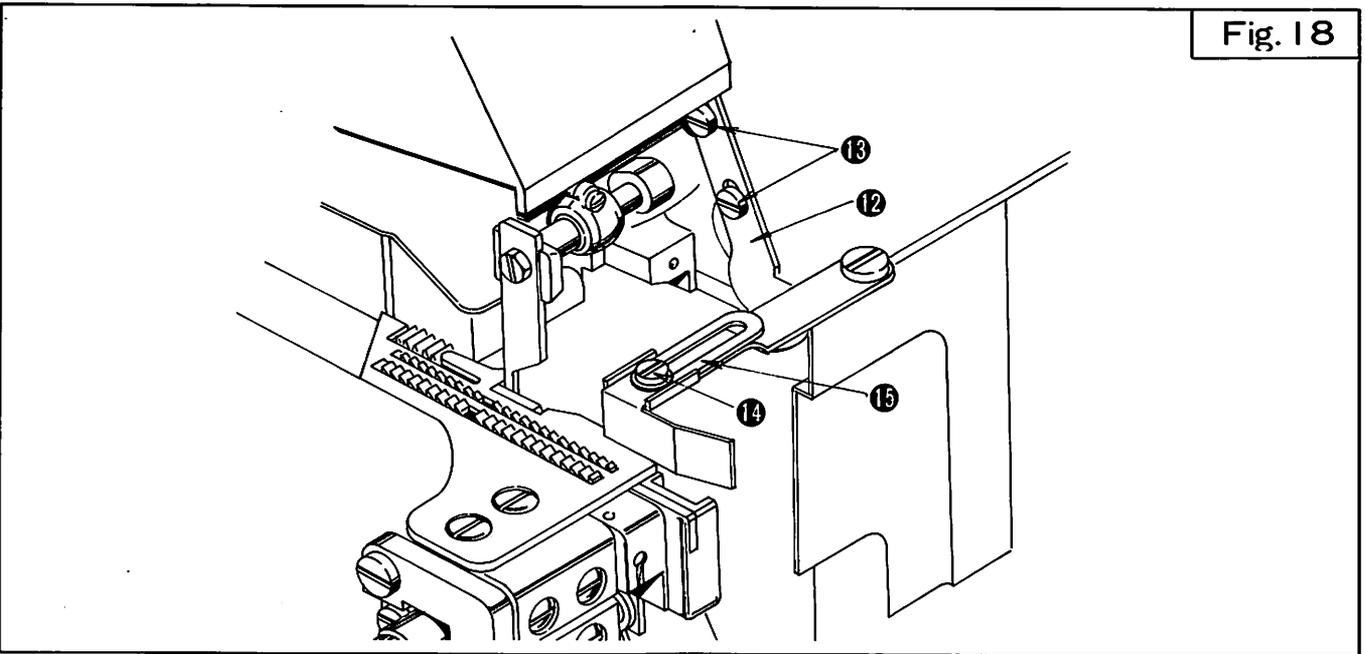


Fig. 18



# MECHANICS' INSTRUCTION

## ALIGNMENT OF NEEDLE PLATE TO FEED Fig. 19, 20, 21

Generally feeds should be in position as shown in Fig. 19. Each row of main and differential feeds rests in the center of each slot of needle plate. For 503/I-25 and 503/II-25, set differential feed even and slightly touching needle plate at right side ①. If this setting is incorrect, reset as follows.

1. Release pressure on foot and swing out foot to the left.
2. Loosen screw ② and move upper knife to the right.
3. Loosen screw ③ and move lower knife to the right.
4. Loosen screws ④ and ⑤.
5. Check the groove of needle plate is on needle plate key and move plate to touch evenly at point ①.
6. Tighten screws ⑤ and ④.
7. Replace both knives into position.
8. Make sure needle descends in the center of the needle hole in needle plate.

## FEED ADJUSTMENT Fig. 22, 23, 24

Standard height of main feed is 0.8-1.2mm (1/32-3/64") above the surface of needle plate at its back tooth when feeds are at their highest position as shown in Fig. 22.

A straight edge can be placed across the top of the main and differential feeds.

Standard height of auxiliary feed is 0.5mm (.020") above needle plate.

### Replacing feeds

1. Turn handwheel until feeds are at their highest position.
2. Release pressure on foot and swing out foot to the left.
3. Swing out cloth plate to the left.
4. Loosen screw ⑥ and remove tube ⑦.
5. Remove screws ⑧ and feeds ⑨.
6. Replace with new feeds and set feeds by raising or lowering feeds until proper height is obtained, then tighten screws ⑧.
7. Replace tube ⑦ and tighten screw ⑥.
8. Return cloth plate and foot to the sewing position.

Feed dogs have generally been preset at the factory with a front to back tilt when feeds are at their highest position as shown in Fig. 22.

### Tilting feeds

1. Turn handwheel until feeds are at their highest position.
2. Release pressure on foot and swing out foot to the left.
3. Swing out cloth plate to the left.
4. Loosen screw ⑩ and turn screw ⑪ with a screwdriver until proper tilt is obtained.
5. Tighten screw ⑩.
6. Return cloth plate and foot to the sewing position.

Woven material – Set feeds level.

Knit material – Tilt feeds higher in the front than the rear.

## ADJUSTING NEEDLE ARM HEIGHT Table 5 Fig. 21, 25, 26, 27

Turn handwheel until needle is at its highest position. Use timing gauge, check the clearance between the point of needle and the top of needle plate as specified in Table 5.

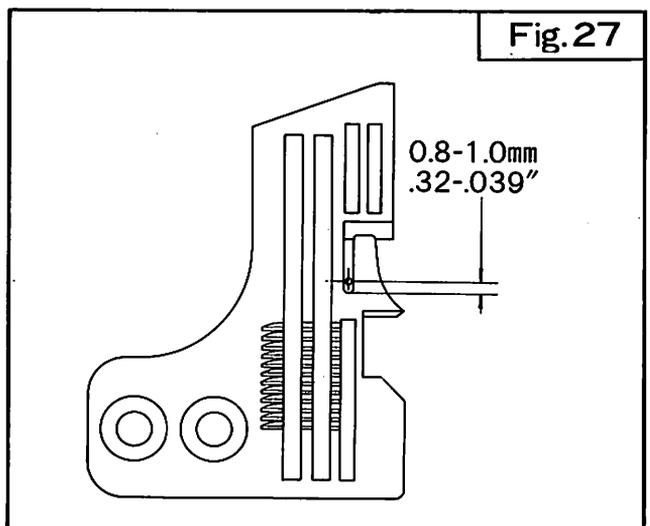
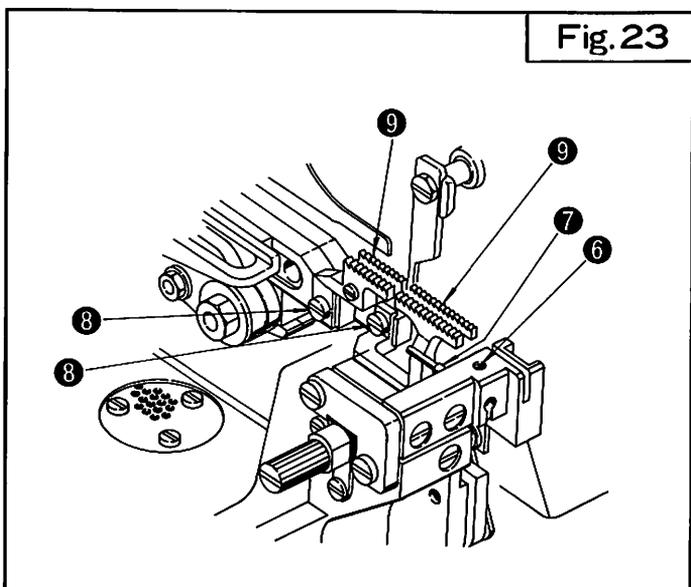
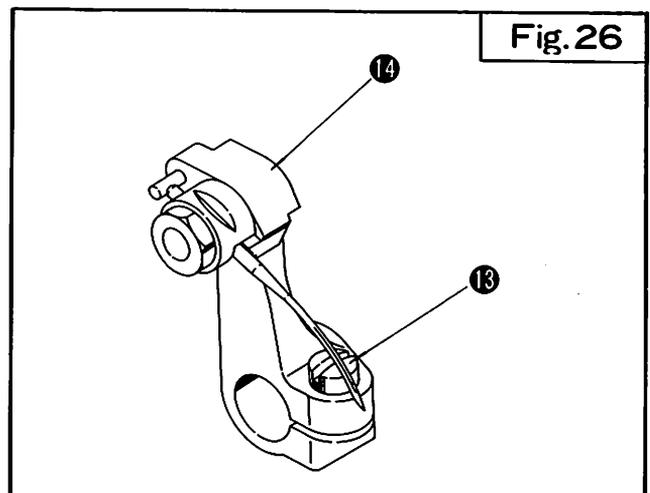
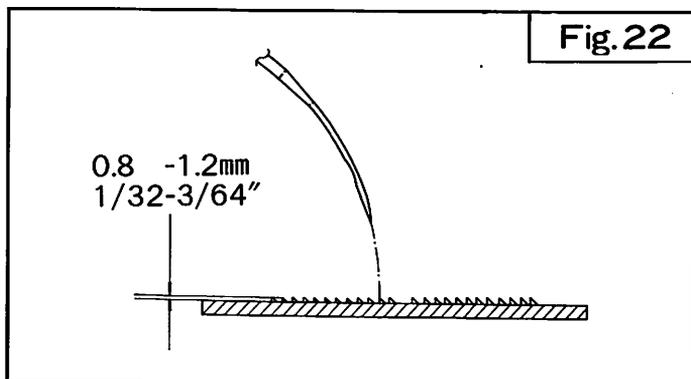
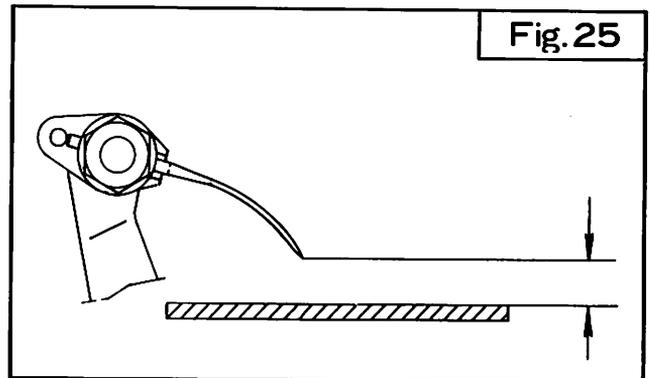
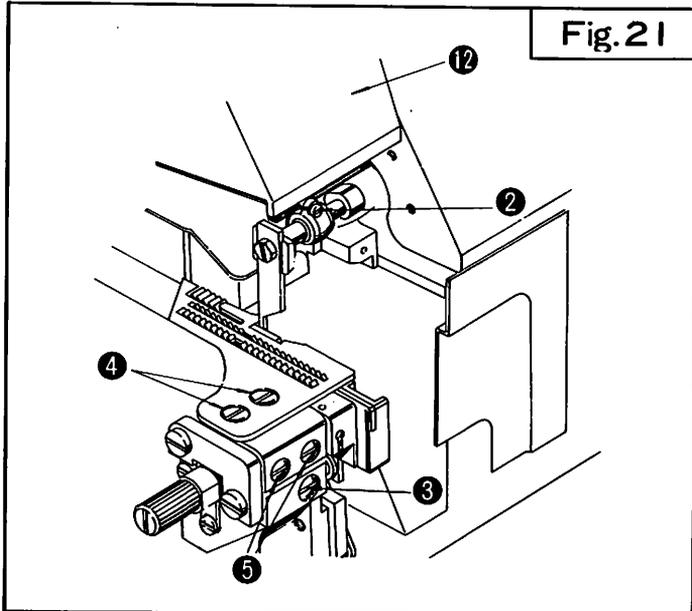
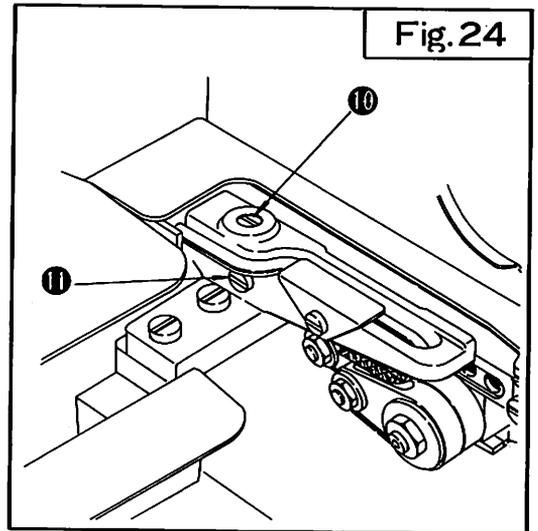
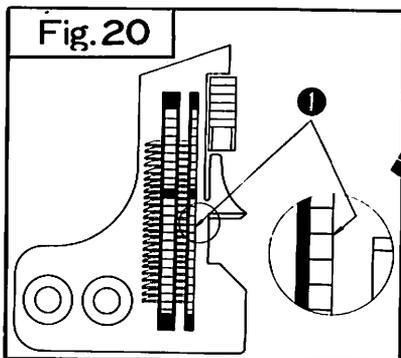
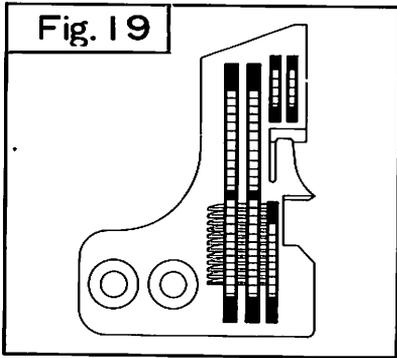
1. Release pressure on foot and swing out foot to the left.
2. Push up cover ⑫.
3. Slightly loosen screw ⑬.
4. Move arm ⑭ to right or left until needle descends in the center of the needle hole in needle plate.
5. Reset arm ⑭ to correct clearance as listed below at its highest position.
6. Tighten screw ⑬ securely.
7. Return cover ⑫ and foot to the sewing position.

At this time, with arm ⑭ down, check to see that there is clearance between the front edge of the needle hole in needle plate and needle as shown in Fig. 27.

If clearance is insufficient, loosen screws ④ and move needle plate back and forth until correct clearance is obtained.

MODEL	CLEARANCE	
	MM	INCH
500/I	9.8	.386
500/II	10.3	.406

Table 5



## LEFT LOOPER ADJUSTMENT

Table 6 Fig. 28, 29, 30, 31

1. Release pressure on foot and swing out foot to the left.
2. Swing out cloth plate to the left and open front cover.
3. Remove needle plate.
4. Remove needle guards as instructed on this page.
5. Remove feeds as instructed on page 12.
6. Turn handwheel until looper lever ① is in the extreme left position.
7. Loosen screw ② and remove looper.
8. Insert new looper into lever ① and push down until base of looper shank reaches shaft ③ and tighten screw ②.
9. Loosen screw ④ with wrench and adjust point of looper from centerline of needle to correct clearance as listed below and lightly tighten screw ④.

On the two needle machine, set point of looper from centerline of left needle to correct clearance as shown in Fig. 29.

10. Turn handwheel until looper point is in the centerline of needle.
11. Move lever ① back and forth along its shaft ③ so that the looper point just touches needle, then tighten screw ④.
12. The point of looper should be in the scarf of needle as shown in Fig. 30.
13. Recheck clearance and tighten screw ④ securely.
14. Replace feeds as instructed on page 12.
15. Replace needle guards as instructed on this page.
16. Replace needle plate.
17. Return cloth plate, front cover and foot to the sewing position.

Note: Left looper has a 2.3mm (3/32") offset when viewed from above looper lever in the machine.

Looper is self setting as shown in Fig. 31.

FEDERAL STITCH	MODEL	GAUGE	CLEARANCE	
			MM	INCH
503	503/I, II		5.3	.209
504	504/I, II		5.3	.209
512	514/I, II	2.0	5.3	.209
		3.0	4.3	.169
514	514/I, II	2.0	5.3	.209

Table 6

## ADJUSTING NEEDLE GUARDS

Fig. 32

Machines are fitted with front and rear needle guards. Set rear guard ⑤ first.

1. Release pressure on foot and swing out foot to the left.
2. Swing out cloth plate to the left.
3. Remove needle plate.
4. Remove feeds as instructed on page 12.
5. Loosen screw ⑥ and remove guard ⑦.

### REAR NEEDLE GUARD

6. Loosen screw ⑧ and remove rear guard ⑤.
7. Replace with new guard ⑤ and lightly tighten screw ⑧.
8. Turn handwheel until the point of left looper is opposite to the centerline of needle.
9. Adjust guard ⑤ back and forth until it just touches needle without deflecting needle point.
10. Tighten screw ⑧ securely.

### FRONT NEEDLE GUARD

11. Replace with new guard ⑦.
12. Adjust guard ⑦ until there is a space of 0.1-0.2mm (.004-.008") between needle and guard ⑦.
13. Tighten screw ⑥ securely.
14. Recheck setting after tightening screws ⑥ and ⑧.
15. Replace feeds as instructed on page 12.
16. Replace needle plate.
17. Return cloth plate and foot to the sewing position.

CAUTION: Needle guards must be reset when needle size is changed.

Fig. 28

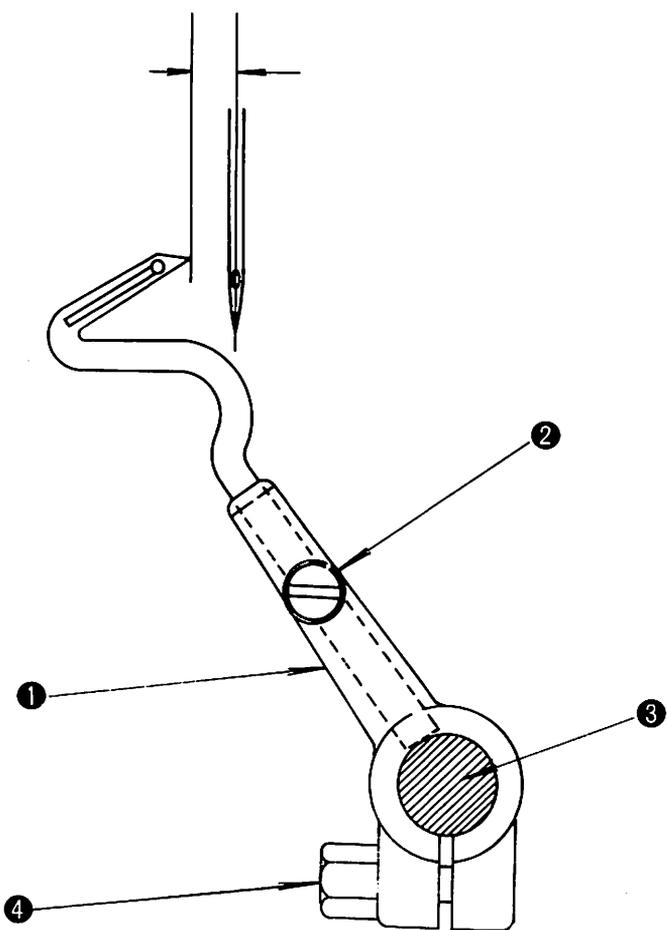


Fig. 30



Fig. 31

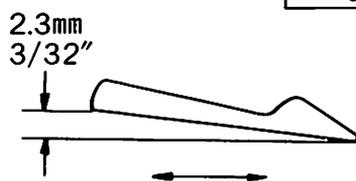


Fig. 29

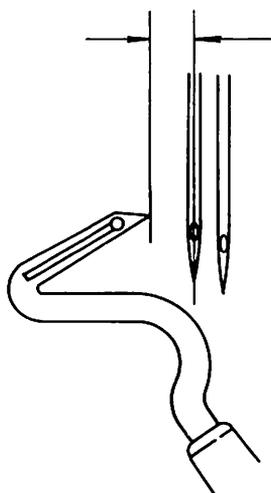
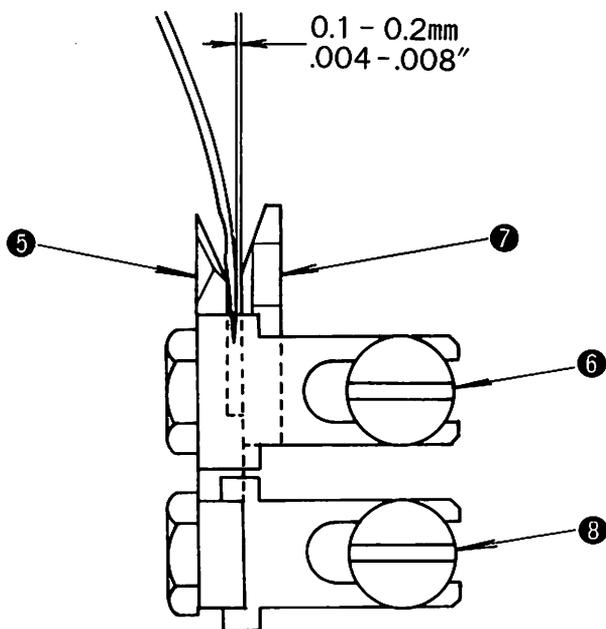


Fig. 32



# RIGHT LOOPER ADJUSTMENT

Table 7, 8 Fig. 33 – 43

## 500/I

1. Release pressure on foot and swing out foot to the left.
2. Swing out cloth plate to the left.
3. Open front cover and remove looper thread plate.
4. Remove needle plate.
5. Remove feeds as instructed on page 12.
6. Turn handwheel until connection ① is at its lowest position.
7. Loosen screw ② and adjust the clearance from the back edge of looper to the face of looper lever ③ to 3mm (1/8").
8. Tighten screw ② lightly.
9. Turn handwheel until looper is at its extreme left position.
10. Loosen screws ④ and ⑤.
11. Slightly loosen screw ⑥ and adjust looper eye or spreader (bottom of V groove) from centerline of needle to correct clearance as listed below by moving connection ① downward or upward.
12. Make sure it is correct, then tighten screw ⑥ lightly.
13. Turn handwheel slowly and observe that when both loopers pass they should be as close as possible without touching as shown in Fig. 35 and 36.
14. If right looper strikes left looper, move connection ① downward. Move right looper to the left until correct clearance is obtained as listed below. Turn handwheel and observe that both loopers pass as shown in Fig. 35.
15. If clearance is too much, move connection ① upward. Move right looper to the right until correct clearance is obtained as listed below. Turn handwheel and observe that both loopers pass as shown in Fig. 35.
16. Tighten screw ⑥, and tighten screws ④ and ⑤ alternately.
17. Rotate looper in its lever ③ and adjust right looper so that both loopers pass as shown in Fig. 36.
18. Retighten screw ② securely.
19. Looper should not strike needle when passing as shown in Fig. 37.  
On the two needle machine, adjust looper so that upper portion of the back of looper just touches the right needle in its movement to the right as shown in Fig. 38.
20. Replace feeds as instructed on page 12.
21. Replace needle plate.
22. Replace looper thread plate and close front cover.
23. Return cloth plate and foot to the sewing position.

FEDERAL STITCH	MODEL	GAUGE	CLEARANCE		FIG.
			MM	INCH	
503	503/I, II		3.0	.118	39
504	504/I, II		3.0	.118	40
512	514/I, II	2.0	0	0	41
		3.0	-1.0	-.039	42
514	514/I, II		3.0	.118	43

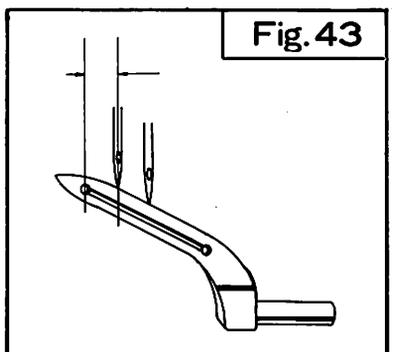
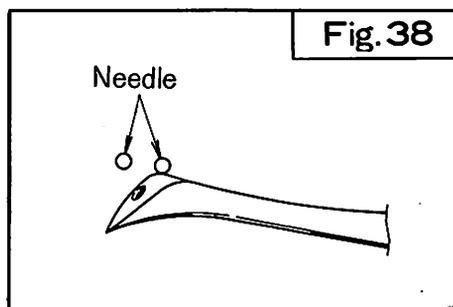
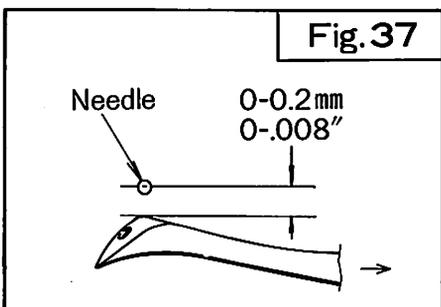
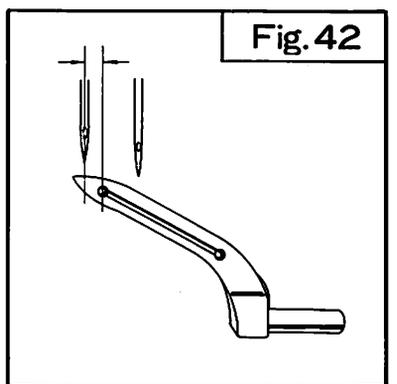
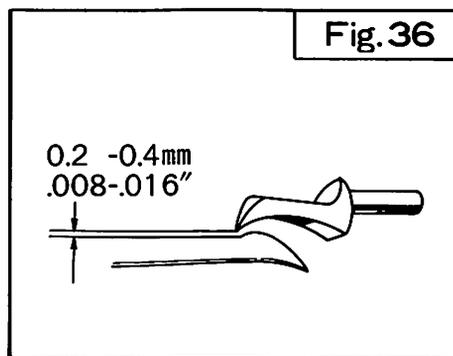
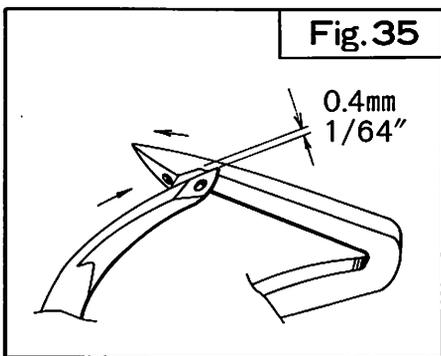
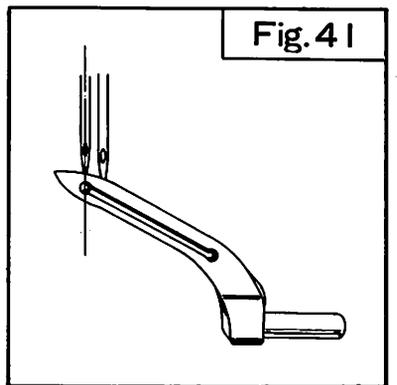
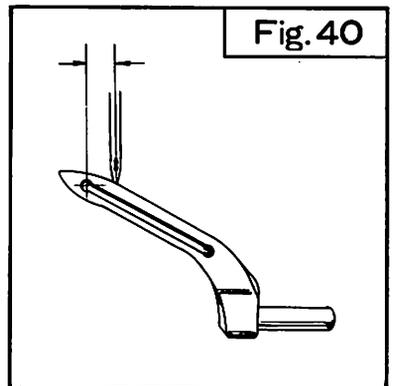
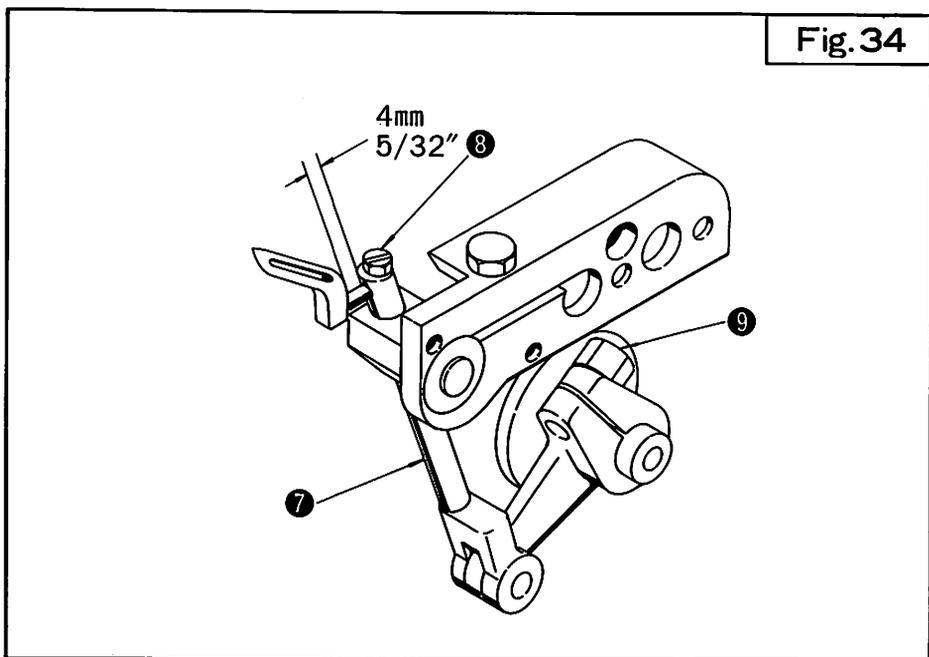
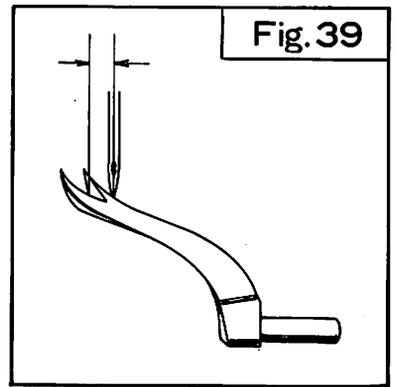
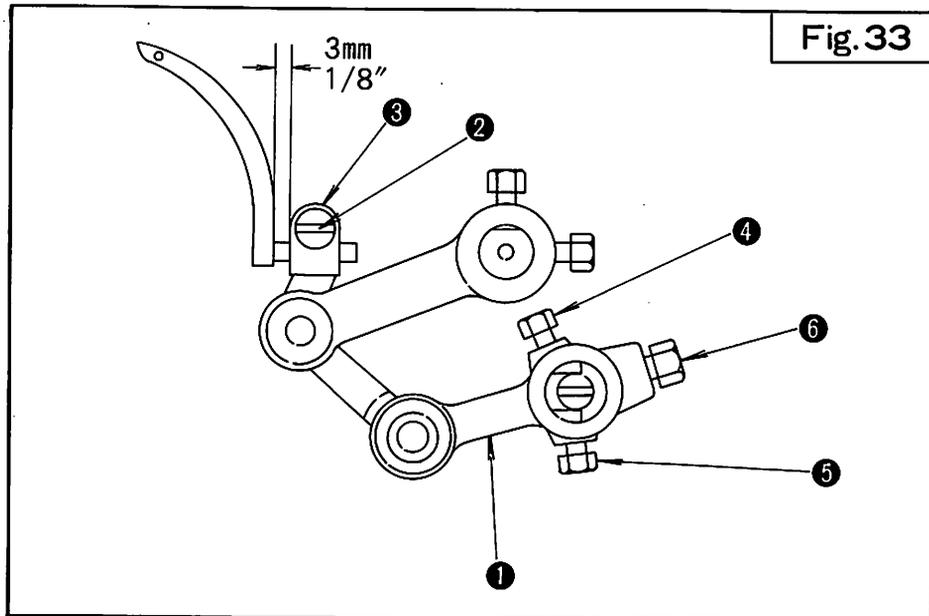
## 500/II

1. Release pressure on foot and swing out foot to the left.
2. Swing out cloth plate to the left.
3. Open front cover and remove looper thread plate.
4. Remove needle plate.
5. Remove feeds as instructed on page 12.
6. Turn handwheel until looper lever ⑦ is at its lowest position.
7. Loosen screw ⑧ and adjust the clearance from the back edge of looper to the left side of lever ⑦ to 4mm (5/32").
8. Tighten screw ⑧ lightly.
9. Turn handwheel until looper is at its extreme left position.
10. Slightly loosen screw ⑨.
11. Adjust looper eye or spreader (bottom of V groove) from centerline of needle to correct clearance as listed below by moving lever ⑦ downward or upward.
12. Make sure it is correct, then tighten screw ⑨ lightly.
13. Turn handwheel slowly and observe that when both loopers pass they should be as close as possible without touching as shown in Fig. 35 and 36.
14. If right looper strikes left looper, move lever ⑦ downward. Move right looper to the left until correct clearance is obtained as listed below. Turn handwheel and observe that both loopers pass as shown in Fig. 35.
15. If clearance is too much, move lever ⑦ upward. Move right looper to the right until correct clearance is obtained as listed below. Turn handwheel and observe that both loopers pass as shown in Fig. 35.
16. Tighten screw ⑨ securely.
17. Rotate looper in its holder and adjust right looper so that both loopers pass as shown in Fig. 36.
18. Retighten screw ⑧ securely.
19. Looper should not strike needle when passing as shown in Fig. 37.

On the two needle machine, adjust looper so that upper portion of the back of looper just touches the right needle in its movement to the right as shown in Fig. 38.

20. Replace feeds as instructed on page 12.
21. Replace needle plate.
22. Replace looper thread plate and close front cover.
23. Return cloth plate and foot to the sewing position.

Note: Various right loopers are provided as listed on page 18 for use with various size needles. For ease of identification some loopers have been marked with a looper marking.



## PRESSER ARM ALIGNMENT

Fig. 44, 45, 46

Presser arm must be aligned correctly front to back and right to left to insure lifting without a bind and alignment of the needle hole in foot with the needle hole in needle plate.

### Front to back alignment

1. With foot attached to arm, loosen screws ❶ and ❷.
2. Adjust arm back and forth while lifting to insure there is no bind in bar ❸.
3. Tighten screw ❷.
4. Position regulator ❹ against connection ❺.
5. Tighten screw ❶.

Once set do not loosen screw ❷.

### Right to left alignment

1. Loosen screws ❸ and ❷.
2. Shift bracket ❸ and guide ❹ to the right or left until the needle hole in foot and the needle hole in needle plate are aligned.
3. Check bar ❸ is on guide ❹ properly and presser arm is straight.
4. Tighten screws ❸ and ❷.

## PRESSER FOOT ADJUSTMENT

Fig. 45, 46

### Setting foot square and flat

1. Remove pressure from foot by turning screw ❶ anti-clockwise.

2. Turn handwheel until feeds are at its lowest position.
3. Loosen screw ❶ and position foot flat on needle plate.
4. Tighten screw ❶ and reset pressure by turning screw ❶ clockwise.
5. Pressure should be just enough to feed material evenly so that proper stitch is formed.

### Adjusting foot tilt

1. Loosen screw ❷.
2. Raise or lower regulator ❸ to give the desired tilt for the weight of material being sewn.
3. Retighten screw ❷.

## PRESSER FOOT LIFT ADJUSTMENT

Fig. 45, 46, 47

1. Loosen nut ❶ and turn screw ❷ until its lowest position.
2. Loosen nut ❸.
3. Turn screw ❹ until a lift is obtained of 6.0mm (15/64") when presser foot is lifted. (4.5mm for 500/I)
4. Tighten nut ❸.
5. While lifting presser foot of 6.0mm (4.5mm for 500/I), turn screw ❷ until the clearance between screw ❷ and stopper ❸ is obtained of 0.5mm (.020").
6. Tighten nut ❶.
7. With presser foot on needle plate, loosen nut ❸ and adjust the play clearance from the bottom of screw ❷ to top of lever ❹ to 2 - 3mm (5/64 - 1/8") by turning screw ❷.
8. Tighten nut ❸.

### RIGHT LOOPERS FOR USE WITH VARIOUS SIZE NEEDLES

MODEL	THREADS	FEDERAL STITCH	LOOPER MARKING	NEEDLE SIZE IDENTIFICATION			PART NUMBER	
				SINGER	W & G	METRIC	NEW NO.	OLD NO.
500/I	2	503		9-12	25-32	65-80	323-810-003	201234A
				13-16	34-40	85-100	323-810-013	202475
	3	504		9-12	25-32	65-80	323-810-001	201067A
				13-16	34-40	85-100	323-810-004	201287A
500/II	4	512		11-14	30-36	75-90	323-810-001	201067A
	4	514		9-12	25-32	65-80	323-810-004	201287A
				9-12	25-32	65-80	323-810-213	202842
	3	504	4	9-12	25-32	65-80	323-810-211	202874
				13-16	34-40	85-100	323-810-224	202828
3	521	2	9-12	25-32	65-80	323-810-213	202842	
4	512	7	9-12	25-32	65-80	323-810-214	202872	
			13-16	34-40	85-100	323-810-007	202989	
4	514	1	9-14	25-36	65-90	323-810-211	202874	

Table 8

Fig. 44

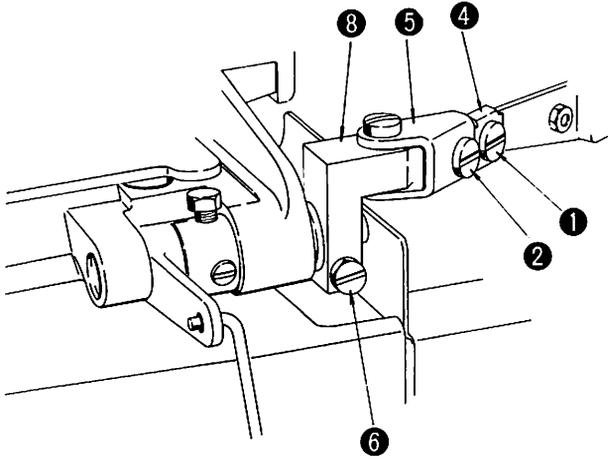


Fig. 46

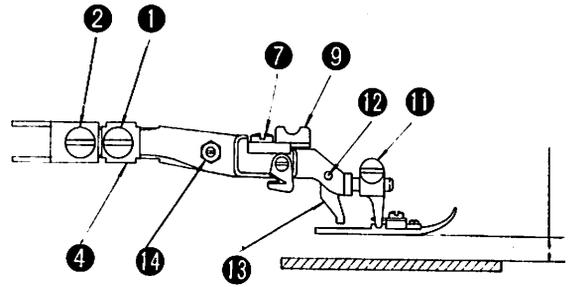


Fig. 45

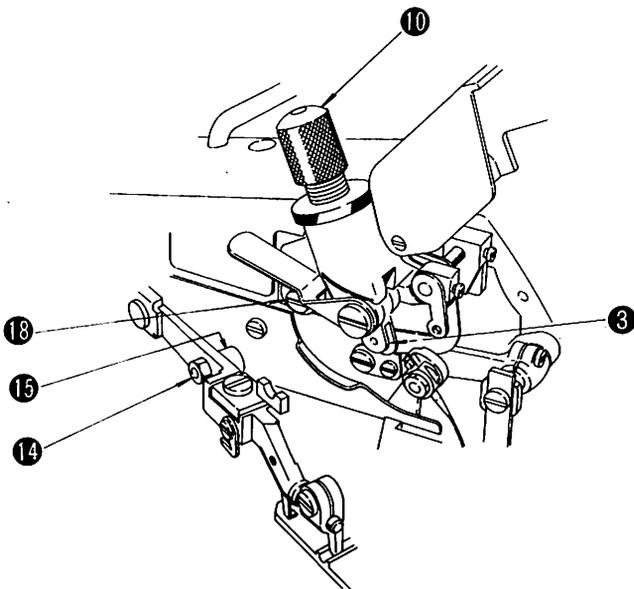
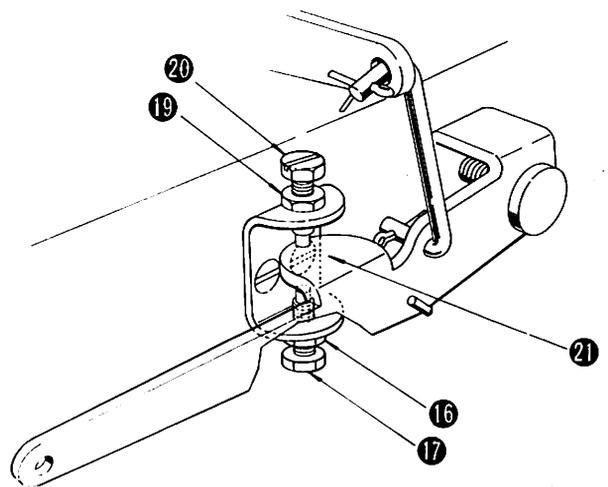
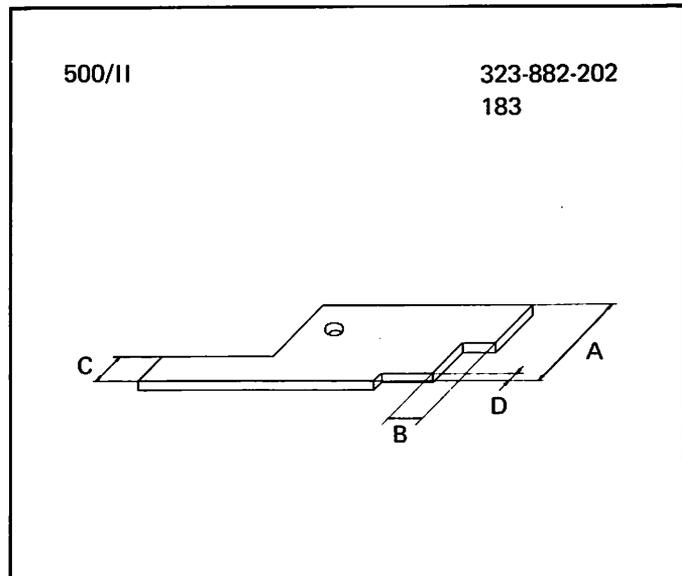
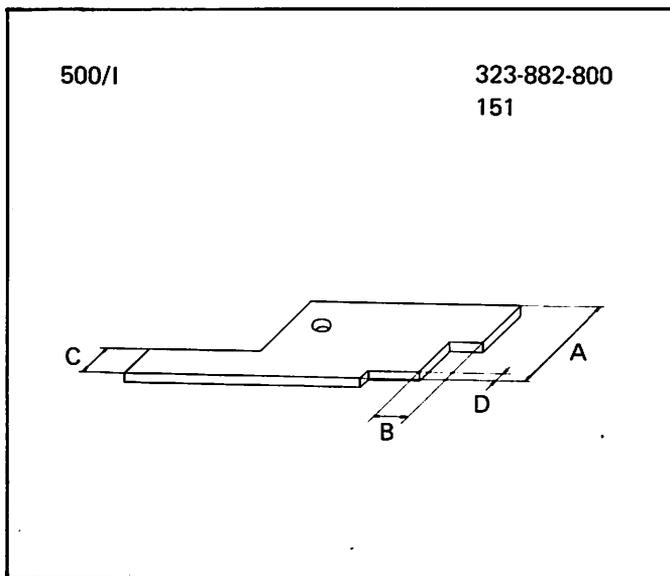


Fig. 47



## 500/I & 500/II TIMING GAUGES



### RESPECTIVE POSITIONS REQUIRED AT MEASURING

- A) Needle, at upper dead point
- B) Right looper, at left dead point  
(Needle size 9)
- C) Left looper, at left dead point  
(Needle size 9)
- D) Main feed dog, at upper dead point

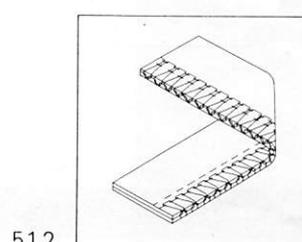
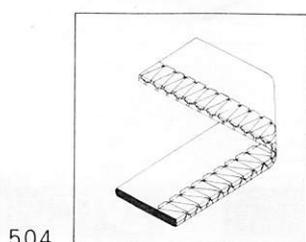
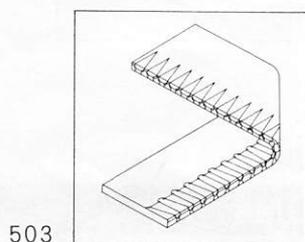
### BASIC POSITIONS ON MEASURING

- from needle plate top to needle point.
- from left side of needle to center of looper eye.
- from left side of needle to looper point.
- from needle plate top to top edge of feed teeth.

# ORGANIZATION CHART

Model	Gauge		U. S. stitch	Number of		Feed design	Feed eccentrics provided			Type and size of needle	Operation
	inch	mm		needles	threads		Main	Diff.	Accessory		
504/I-5	1/8 5/32	3 4	504	1	3	2-row differential	10	10	8 and 12	UO×154 #11 UY154GAS #75	Seaming and closing knits.
504/I-45	1/8 5/32	3 4	504	1	3	2-row differential	10	10	8 and 12	UO×154 #11 UY154GAS #75	Seaming and closing knit and woven fabrics. For stretching action, use accessory eccentric.
504/I-43	1/8 5/32	3 4	504	1	3	3-row differential	10	10	8 and 12	UO×154 #11 UY154GAS #75	Seaming and closing knit goods.
504/I-47	1/8 5/32	3 4	504	1	3	3-row long differential	10	10	8 and 12	UO×154 #16 UY154GAS #100	Edging and seaming on medium weight woven and knit fabrics.
514/I-41	5/64×5/32	2×4	512	2	4	3-row differential	10	10	8 and 12	UN×154 #14 UY8454GAS #90	2-needle seaming on stretch fabrics.
514/I-42	1/16×1/8 5/64×1/8 5/64×5/32	1.6×3 2×3 2×4	512	2	4	2-row differential	10	10	8 and 12	UN×154 #14 UY8454GAS #90	2-needle seaming on stretch fabrics.
503/I-4	1/8 5/32	3 4	503	1	2	2-row long plain	6	--	5.5	UO×154 #14 UY154GAS #90	Serging woven fabrics with adjustable edge guide.
503/I-8	1/8 5/32	3 4	503	1	2	2-row plain	6	--	5.5	UO×154 #14 UY154GAS #90	Serging woven fabrics with adjustable edge guide.
503/I-25	5/32	4	503	1	2	2-row differential	10	10	8 and 12	UO×154 #9 UY154GAS #65	Blindstitch hemming on light to medium heavy knits with hem guide.
504/I-1	1/16 3/32	1.6 2.4	504	1	3	1-row differential	12	12	10 and 14	UO×154 #9 UY154GAS #65	Seaming on light weight fabrics.
504/I-9-Z7	1/16	1.6	504	1	3	1-row differential	12	14	16 and 20	UO×154 #9 UY154GAS #65	Curtain industry. Combined hemming and edging with single down turn.
504/I-10	1/8 5/32	3 4	504	1	3	1-row differential	8	8	10 and 12	UO×154 #16 UY154GAS #100	Towel industry. Combined hemming and edging with single up turn.

-40 series, 504/I-45, e.g. are with chaining-land needle plate.



## FEATURES

- \* Curved needle offering the lightest possible load and quality production sewing
- \* Totally enclosed, fully automatic lubrication.
- \* Stitch range can be changed by eccentric cams.
- \* Positive feeding with minimum pressure
- \* Superior differential feeding mechanism

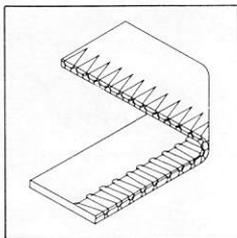
## SPECIFICATIONS

- SPEED : Up to 7000 s.p.m. depending on sew-off specification and/or operation
- STITCH RANGE : Eccentric available for from 5.5 to 30 s.p.i.
- SEAM WIDTH : 1/16"(1.6mm) to 5/32"(4.0mm)
- PRESSER FOOT LIFT : 11/64"(4.5mm)
- TYPE OF FEED : Differential or plain
- TYPE OF FOOT : Swingout, hinged
- INSTALLATION : Flush or semi-submerged
- MOTOR POWER : 400W output(1/2HP)
- NEW WEIGHT : 16.7kgs. (37lbs.)

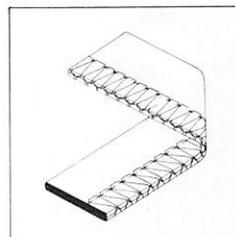
# ORGANIZATION CHART

Model	Gauge		U. S. stitch	Number of		Feed design	Feed eccentrics provided			Type and size of needle	Operation
	inch	mm		needles	threads		Main	Differential	Accessory		
504/II-5	3/16 1/4	5 6	504	1	3	2-row differential	10	10	8 and 12	UO×154 #14 UY154GAS #90	Seaming and closing knits.
504/II-45	1/8 5/32 3/16 1/4	3 4 5 6	504	1	3	2-row differential	10	10	8 and 12	UO×154 #14 UY154GAS #90	Seaming and closing knit and woven fabrics. For stretching action, use accessory eccentrics.
504/II-43	1/8 5/32 3/16 1/4	3 4 5 6	504	1	3	3-row differential	10	10	8 and 12	UO×154 #14 UY154GAS #90	Seaming and closing knit goods.
504/II-47	1/8 5/32 3/16 1/4	3 4 5 6	504	1	3	3-row long differential	10	10	8 and 12	UO×154 #16 UY154GAS #100	Edging and seaming on medium weight woven and knit fabrics.
514/II-41	5/64×5/32 5/64×3/16	2×4 2×5	512	2	4	3-row differential	10	10	8 and 12	UN×154 #14 UY8454GAS #90	2-needle seaming on stretch fabrics.
514/II-42	5/64×1/8 5/64×5/32	2×3 2×4	512	2	4	2-row differential	10	10	8 and 12	UN×154 #14 UY8454GAS #90	2-needle seaming on stretch fabrics.
503/II-4	1/8 5/32 3/16 1/4	3 4 5 6	503	1	2	2-row long plain	6	--	5.5	UO×154 #14 UY154GAS #90	Serging woven fabrics with adjustable edge guide.
503/II-8	1/8 5/32 3/16 1/4	3 4 5 6	503	1	2	2-row plain	6	--	5.5	UO×154 #14 UY154GAS #90	Serging woven fabrics with adjustable edge guide.
503/II-25	5/64 1/8 5/32	2 3 4	503	1	2	2-row differential	10	10	8 and 12	UO×154 #9 UY154GAS #65	Blindstitch hemming on light to medium heavy knits with hem guide.

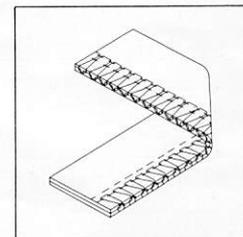
40 series, 504/II-45, e.g. are with chaining-land needle plate.



503



504



512

## FEATURES

- \*Curved needle offering the lightest possible load and quality production sewing.
- \*High lift clearance adaptable to various weight of fabrics.
- \*Totally enclosed, fully automatic lubrication.
- \*Stitch range can be changed by eccentric cams.
- \*Positive feeding with minimum pressure.

## SPECIFICATIONS

SPEED	: UP to 7000 s.p.m. <small>depending on sew-off specification and/or operation</small>
STITCH RANGE	: Eccentric available for from 5.5 to 30 s.p.i.
SEAM WIDTH	: 1/16" (1.6mm) to 1/4" (6mm)
PRESSER FOOT LIET	: 1/4" (6mm)
TYPE OF FEED	: Differential or plain
TYPE OF FOOT	: Swingout, hinged
INSTALLATION	: Flush or semi-submerged
MOTOR POWER	: 400W output (1/2HP)
NET WEIGHT	: 16.7kgs. (37lbs.)

## HOW TO ASSEMBLE BELT GUARD FOR 500/I & /II SERIES MACHINES

Assemble Belt Guard on machine in sequence as follows.

- (1) Put Machine on a Table.
- (2) Replace Screws ❶ for Oil Cooler Cover with Fixing Screws ❷ provided.
- (3) Put V-belt in Machine Pulley.
- (4) Fix Belt Guard ❹ on Fixing Screws ❷ with Screws ❸.
- (5) Rest Machine in position in Work Table.
- (6) Engage V-belt in Machine Motor Pulley.

