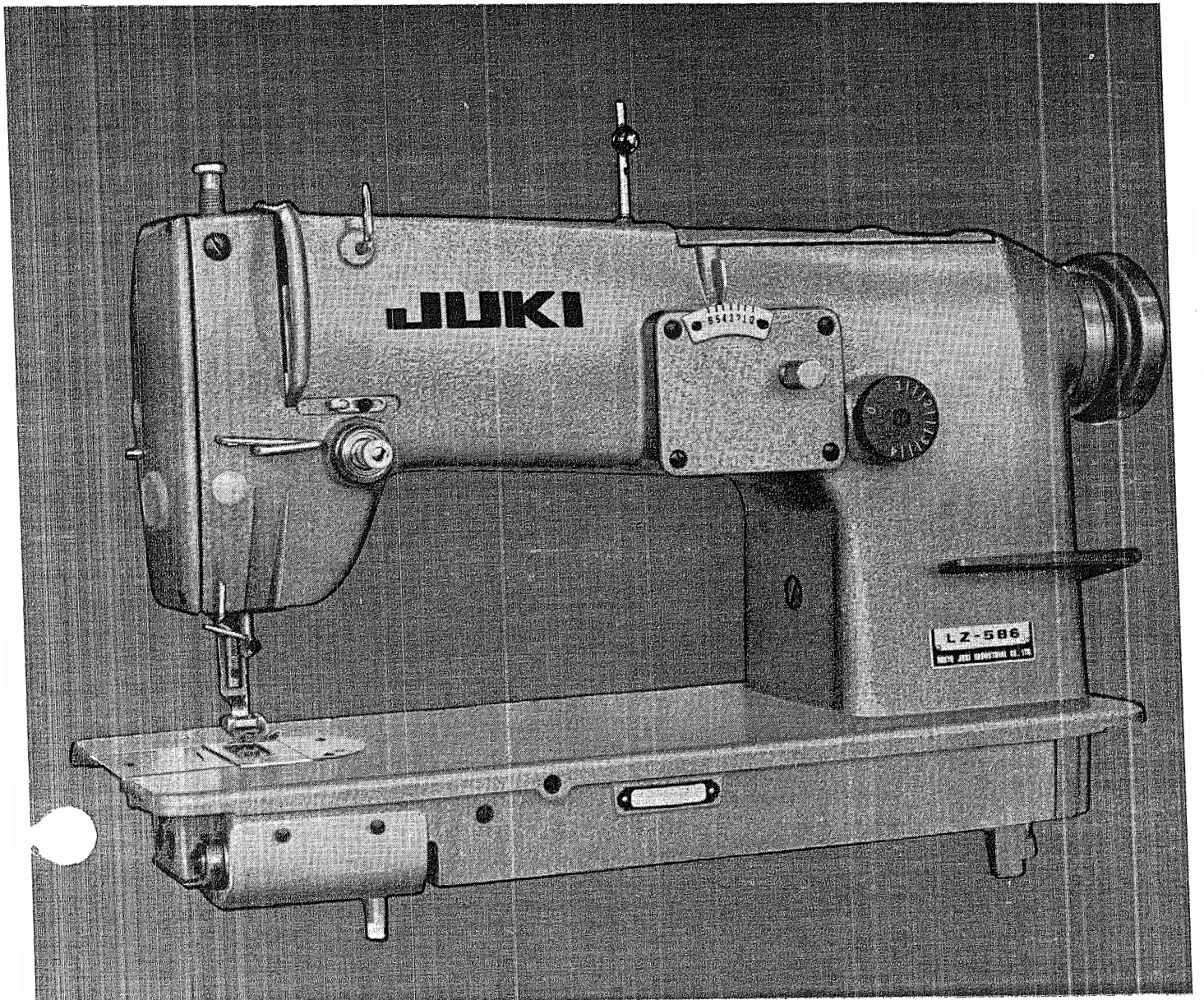


# MODEL **LZ-586**

HIGH SPEED, SINGLE NEEDLE,  
LOCKSTITCH ZIGZAG  
INDUSTRIAL SEWING MACHINE  
WITH A REVERSE FEED MECHANISM

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# INSTRUCTION **BOOK**



**TOKYO JUKI INDUSTRIAL CO., LTD.**

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# I. GENERAL DESCRIPTION

JUKI MODEL LZ-586 is a high speed zigzag industrial sewing machine with a reverse feed mechanism. The sewing hook, thread take-up etc. are specially constructed to withstand high speed sewing and the lubrication is completely automatic. A special research was given to the leakage of oil and as a result, all essential parts are completely encased to prevent any spent oil dripping from the front of arm during the running operation and soiling the sewing cloth.

Besides above, this machine has following good features:

- 1) The movement of the zigzag width of throw of the needle bar has a certain period of rest.

Due to this rest period feature of the needle bar, there is no width of throw while the needle is piercing the cloth. This prevents the cracking of the needle eye or curving of the needle, thereby producing attractive garments.

- 2) The sewing hook driven by bevel gear

As the sewing hook is driven by the transmission power of the bevel gear, the "play" of the sewing hook is negligible and also as the bevel gear is protected by a case, its durability factor is very high.

- 3) Thread pull-off lever

This machine is equipped with a thread pull-off lever to make the pulling out of the sewing hook thread easier. Thus, there is no flaw of the thread tightening, either to right or left.

- 4) Special steel used on all essential parts

The zigzag forked rod, which is one of the important parts of the zigzag machine, is made of specially heat-treated steel to prevent undue depreciation and the needle bar frame is made of special aluminium alloy. With these features, the machine is very light and the running is smooth even at high speed and therefore depreciation and vibration are practically negligible.

5) Automatic lubrication

The lubrication to the essential frictional parts is completely automatic, eliminating hand-oiling during the running of the machine. With this feature, the production efficiency is greatly boosted up.

6) Forced oil drain device

When the oil accumulates at the jaw of the arm, it invites oil leakage from the needle bar and the presser bar. However, with this forced drain device, this spent oil is siphoned up during the running of the machine and returns to the oil reservoir.

**LZ-586 SPECIFICATIONS**

Sewing type .....	Single needle, lockstitch zigzag with a reverse feed mechanism
Usage .....	Light weight, medium heavy, heavy materials
Sewing speed .....	3,500 s.p.m.
Needle .....	DP×58 or DP×5, #11, #14, #16, #18
Stitch length .....	Maximum 4mm(5/32")
Zigzag width .....	0~6mm (15/64")
Lubrication .....	Completely automatic

## II. INSTALLING THE MACHINE AND PREPARATION FOR RUNNING

### 1. How to install the machine

Unpack the machine, clean it thoroughly and install it as follows:

- 1) First, install the oil reservoir firmly on the table.
- 2) Attach the knee lifting components to the oil reservoir.
- 3) Plug in the hinges to the machine head and set it gently on the table.
- 4) Install the thread spindle base and thread winder to the table with screws and peg in the head support rod to the table.

### 2. Motor pulley and belt

Depending upon the nature of the sewing cloth, feed range and the zigzag width of throw, LZ-586 can attain a sewing speed of up to 3,500 s.p.m.

For connecting directly to the power source, a clutch motor of 3-phase 1/2 H.P. is used. Use a M-shaped V belt for this machine. The relative relationship between the rotation of the machine and the effective diameter of the motor pulley is shown in the table below. (The effective diameter of the motor pulley means the diameter measured from the center of the V belt when it is wound around the machine)

	Cycles	Number of rotation	Part No. of the motor pulley	Effective diameter of motor pulley
LZ-586	50 ∞	3400	MTK-PV080000	80 <sup>m/m</sup> (3 - <sup>9</sup> / <sub>64</sub> " )
		3000	MTK-PV070000	70 <sup>m/m</sup> (2 - <sup>3</sup> / <sub>4</sub> " )
	60 ∞	3400	MTK-P0065000	65 <sup>m/m</sup> (2 - <sup>35</sup> / <sub>64</sub> " )
		3000	MTK-P0060000	60 <sup>m/m</sup> (2 - <sup>23</sup> / <sub>64</sub> " )

### III. HOW TO OPERATE THE MACHINE

#### 1. Cautions on operation

- \* Do not operate the machine without filling up the oil reservoir.
- \* The machine rotates toward the operator. (As viewed from the pulley side, it is counter-clockwise. Do not rotate the machine in the wrong direction).
- \* Run the machine at a moderate speed of 2800-3000 s.p.m. for the first month or so and gradually increase the speed depending upon the nature of the work and the capability of the operator.
- \* Rust preventing oil is applied to this machine at the time of packing, so after the machine is unpacked, be sure to clean this oil well and before threading the machine, fill up the oil reservoir and give the machine a trial spin.

#### 2. Lubrication

This machine is lubricated by completely automatic lubrication system. The oil which is applied by the plunger pump to all shaft parts of the machine, returns to the oil reservoir and the circulation is repeated over again. The oil which is accumulated at the jaw part is siphoned up by a pump attached to the main shaft and through the oil sight window, the drain condition can be carefully observed.

Before operating the machine, fill up the hook reservoir (Fig 1 ①) and the hook shaft bevel gear reservoir (Fig 1 ②) with oil, fully. Also, inspect all oil reservoirs of various parts every 2-3 days and when they fall below the red mark, fill them up again. The oil reservoir should be filled up to the mark "HIGH".

When the machine is to be run for the first time, lower the speed somewhat and when it is well oiled, rotate the machine at the normal speed.

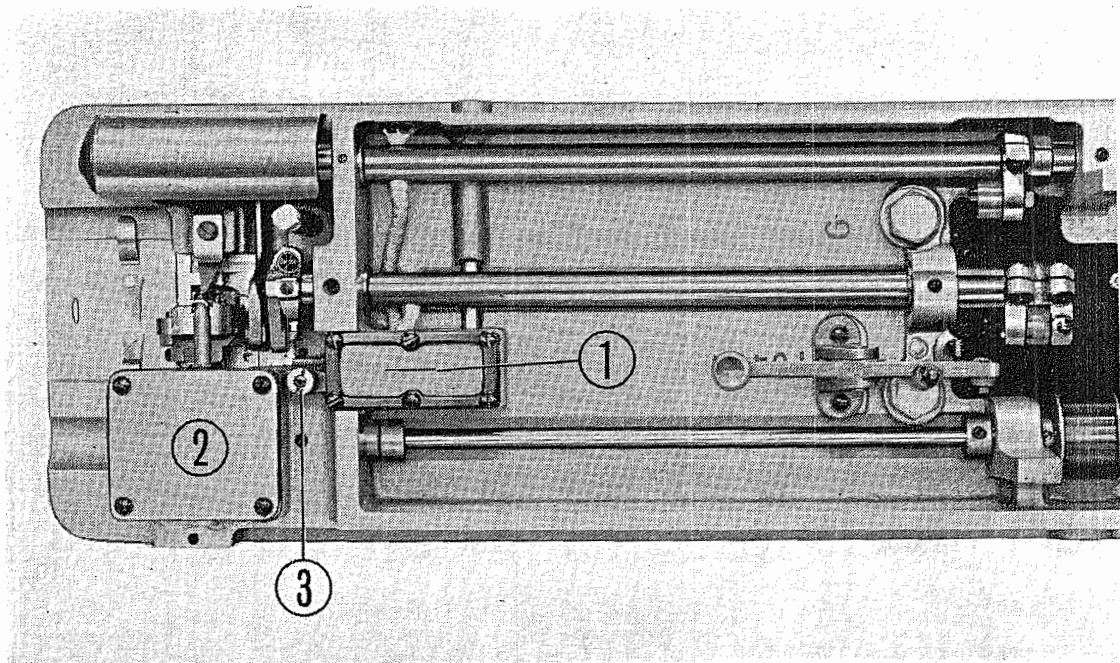


Fig. 1

\* The lubricating oil is siphoned up from the oil reservoir by a pump and enters the oil tank on top of the arm. Then it goes through a copper pipe and a vinyl pipe from this tank and supplies oil to the front part of the main shaft, the central bushing, the feed lifting connection and feed driving connection.

Also, the thread take-up and the needle bar crank are oiled from the oil reservoir from the upper part of the front bushing of the main shaft.

When the oil reservoir is filled up, the oil flows out from the oil escaping hole and enters the oil sight window and thus the smooth circulation of the oil can be readily verified. However, it takes a considerable amount of time for the reservoir to be fully filled up, so the oil does not come to the oil sight window immediately after the start of running.

The oiling to the sewing hook parts can be adjusted by the oil adjusting valve (Fig. 1 ③) If the adjusting valve is turned to right, the oiling amount becomes less and if turned to left, it becomes more. It

takes a certain time interval before the oiling amount to the sewing hook becomes steady. This is because the oil is carried through the oil wicks and does not change immediately after adjusting, so have this in mind when adjusting the oiling amount.

**(Note)**

1) For lubrication, use JUKI industrial oil (New Defrix No. 1) or Esso Spinesso Oil No. 34.

2) Do not run the machine before filling up the oil reservoir or various other oil reservoirs.

3) If oil of low viscosity is used, it might invite oil leakage, especially in summer. On the other hand, if oil of too high viscosity is used, the circulation of the oil becomes bad and might invite scorching of parts.

4) The amount of oil for the sewing hook is adjusted at the time of shipping but this amount may vary according to the temperature of the locality. Be sure to verify the correct amount by removing the needle plate and by attaching a piece of paper, judge the amount of oil splashing the paper.

5) When lint hards or cloth dust get into the oil reservoir, it will stick to the screen of the pump and lower the working efficiency of the screen. Constantly inspect the screen and clean it thoroughly when it's clogged up.

6) When running the machine idly, be sure to fix the position of the presser foot by means of the push button. If the machine is run idly with the presser foot raised up too high, it will result in malfunctioning of the machine.

### 3. How to insert the needle

For LZ-586 machine, uses needle type DP×58 or DP×5 (135×5). There are many types of needles so please select the correct type depending upon the thickness of the thread and the nature of the sewing material.

To insert the needle, rotate the hand wheel and raise up the needle bar to the highest position and then loosen the needle clamping screw. Hold the needle so that the long groove of the needle is facing the operator and insert the needle deep into the needle hole as far as it goes in and clamp in the needle clamp screw tight.

### 4. Threads

The needle thread or the bobbin thread could be either right twist or left twist. But do not use inferior grade of thread with flaws or too thick thread.

### 5. How to wind the bobbin thread

Set the bobbin thread winder on the table with screws as shown in Fig. 2. When the trip latch ④ is knocked down, the bobbin winder ⑤

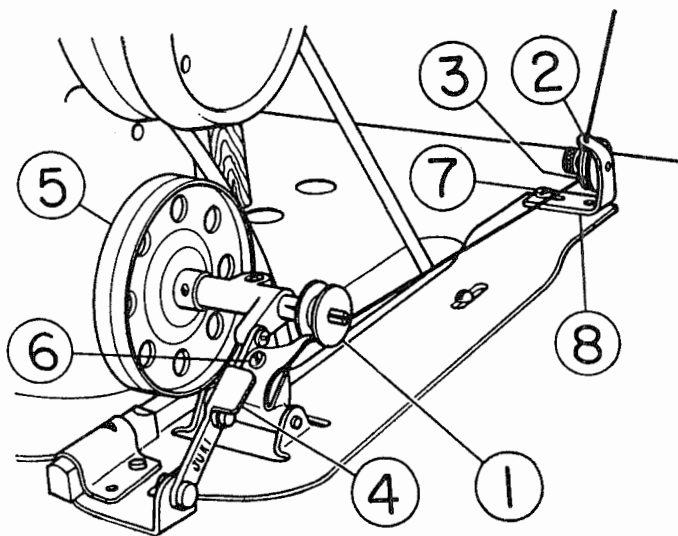


Fig. 2.

should correctly contact the belt. To wind the bobbin thread, insert the bobbin ① deep into the pulley shaft as far as it goes. Then, pass the thread through the thread eye ② and pass it between the thread tension disc ③. (The pressure of the thread tension disc is adjusted according to the kind of thread and the wound condition). For synthetic thread like nylon etc., make it weak, somewhat.

Wind the tip of this thread around the bobbin from under, knock down the trip latch ④ and contact the bobbin winder ⑤ to the belt.

Run the machine and wind the bobbin thread but use the screw ⑥ to make the bobbin thread to be wound to about 80%.

When the thread is not wound evenly to the bobbin, loosen the screw ⑦, move the thread tension disc base ⑧ to right and left to change the slant of the winding thread and find the right winding position. When the winding is completed, the trip latch will come off and the rotation of the bobbin winder will automatically stop. The winding of the bobbin thread should be done during the running of the machine.

(Note) Lubricate the shaft part of the bobbin winder, occasionally.

## 6. Threading the machine (Fig. 3)

Pass the needle thread in the order of ①~⑩ as shown in Fig. 3. After the threading is completed, pull out the tip of the passed thread about 10cm (about 4").

(Note) When using thick cotton thread #50 or over or nylon or tetoron threads, tuck them in between the small tension discs attached to the thread guide bar and pass it through the 3-eyelet thread guide.

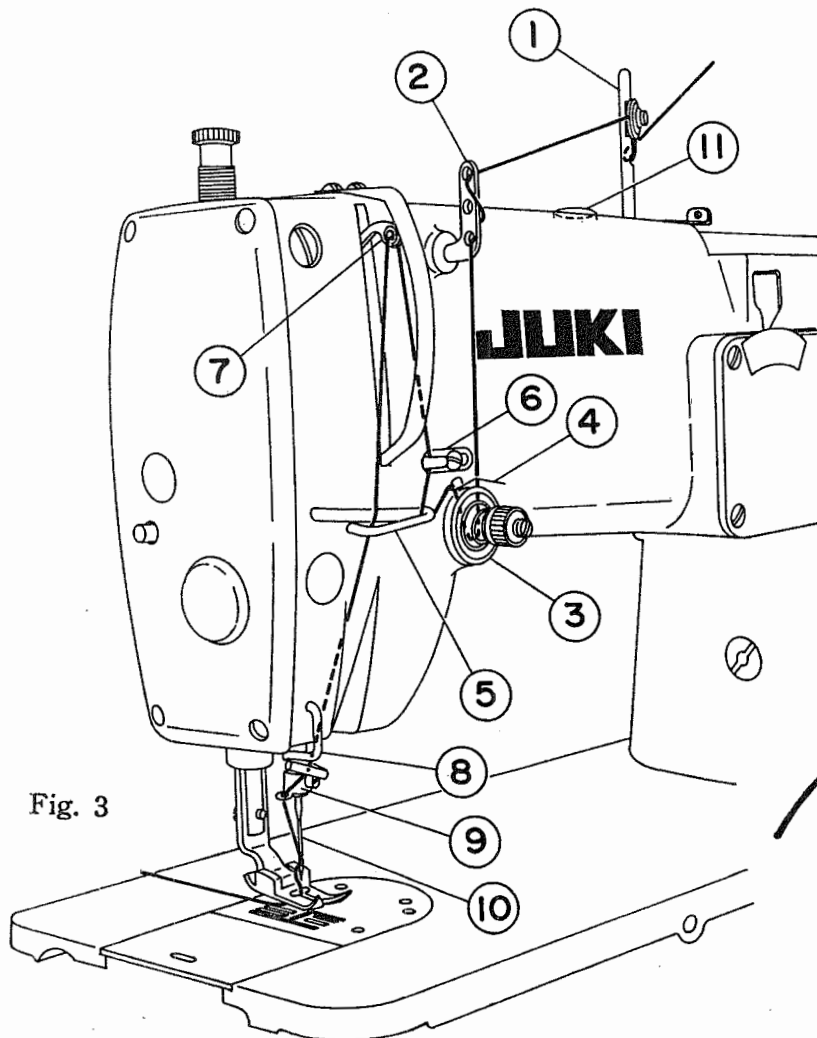


Fig. 3

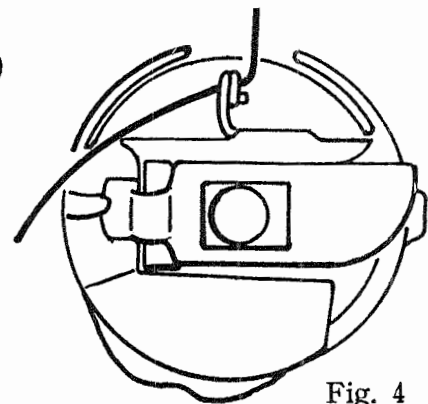


Fig. 4

## 7. How to pass the bobbin thread (Fig. 4)

Pass the bobbin thread into the bobbin case, then pass it under the thread tension disc spring and as shown in Fig. 4, pass it through the thread eye in the front and into the sewing hook.

## 8. How to maintain thread tension

As shown in Fig. 5 the thread tension should be so maintained that the intersecting of the needle thread and the bobbin thread should come to the center of the sewing cloth.

Please note that in the following cases, thread breakage may result, so be careful.

- a) When the thread passing is wrong
- b) When the bobbin thread is all gone or broken
- c) When the sewing hook is installed wrong
- d) When the sewing hook is bruised
- e) When the needle thread tension is too strong
- f) When the thread path is bruised

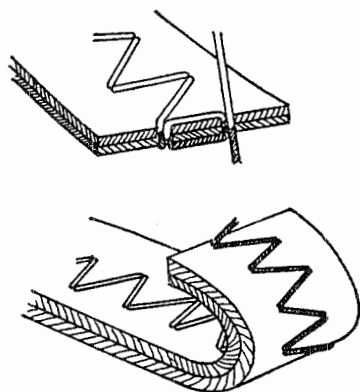


Fig. 5

## 9. Adjusting the zigzag width of throw (Fig. 7)

To change the width of throw of the needle, loosen the knob ① of the name plate in the center of the arm and by matching the lever ② to the designated graduation, set the knob.

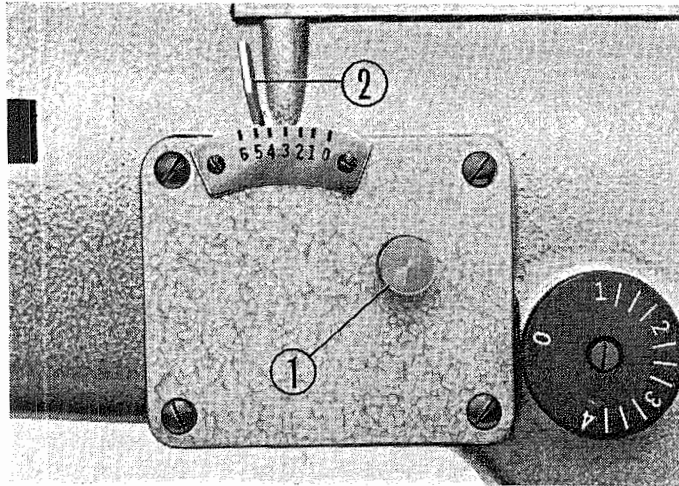


Fig. 7

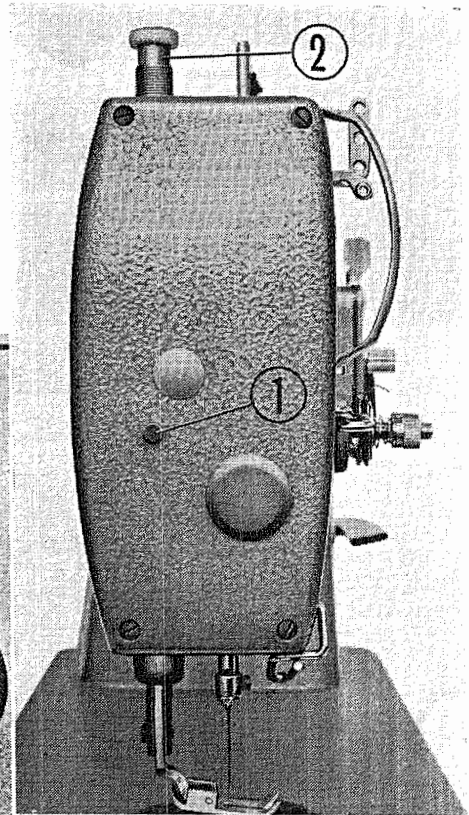


Fig. 8

#### 10. The presser foot (Fig. 8)

When you want the presser foot to stay in the raised up condition, first, raise up the presser foot by the knee lifter, then push the push button ① of the face plate and if the knee lifter is lowered, the presser foot will come to a stop at about 6mm (1/4") above the face plate. To bring down the presser foot, just activate the knee lifter and presser foot will come down.

#### 11. Adjusting the pressure of the presser foot (Fig. 8)

To increase the pressure of the cloth pressing power, turn the presser foot adjusting screw ② to your right. If it is turned to your left, it will become weaker. The feeding power of the cloth varies according to the kind of sewing cloth but it is about 3kg~8kg. (6.6 lbs~17.6lbs)

## 12. Adjusting the stitch length ( Fig. 9 )

To change the stitch length, do as follows:

By rotating the graduated dial ① below the upper cover, match the graduation to the designated position. Maximum stitch length of 4mm (5/32") can be produced. Also, if the lever ②, which is attached below the hand wheel is pushed, reverse sewing can be performed.

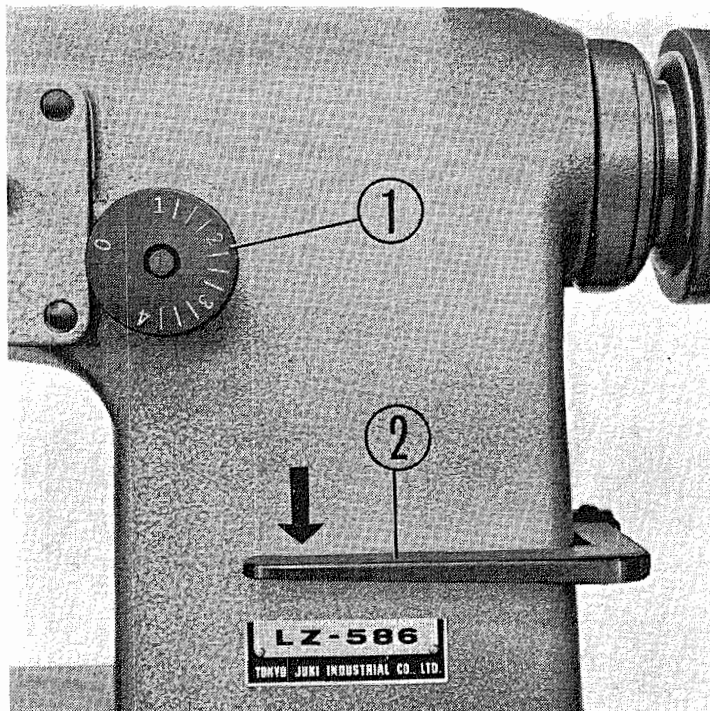


Fig. 9

## IV. ADJUSTING THE MACHINE

### 1. How to remove the sewing hook ( Fig. 10 )

The removing of the sewing hook is exactly like any other industrial sewing machines. The only difference is that the hook is so-called front

type which means it is facing the operator.

To remove the sewing hook, tilt the machine head to the other side, raise up the needle bar to the uppermost position, remove the needle positioner installing screw ① and remove the needle positioner. Next, remove the thread pull-off lever set screw ③, remove the thread pull-off lever ④ and by loosening the 3 set screws ⑤ which are clamping the hook, remove the sewing hook. (Be careful when you do this because if the needle is in lowered position when you take the hook out, the needle might break)

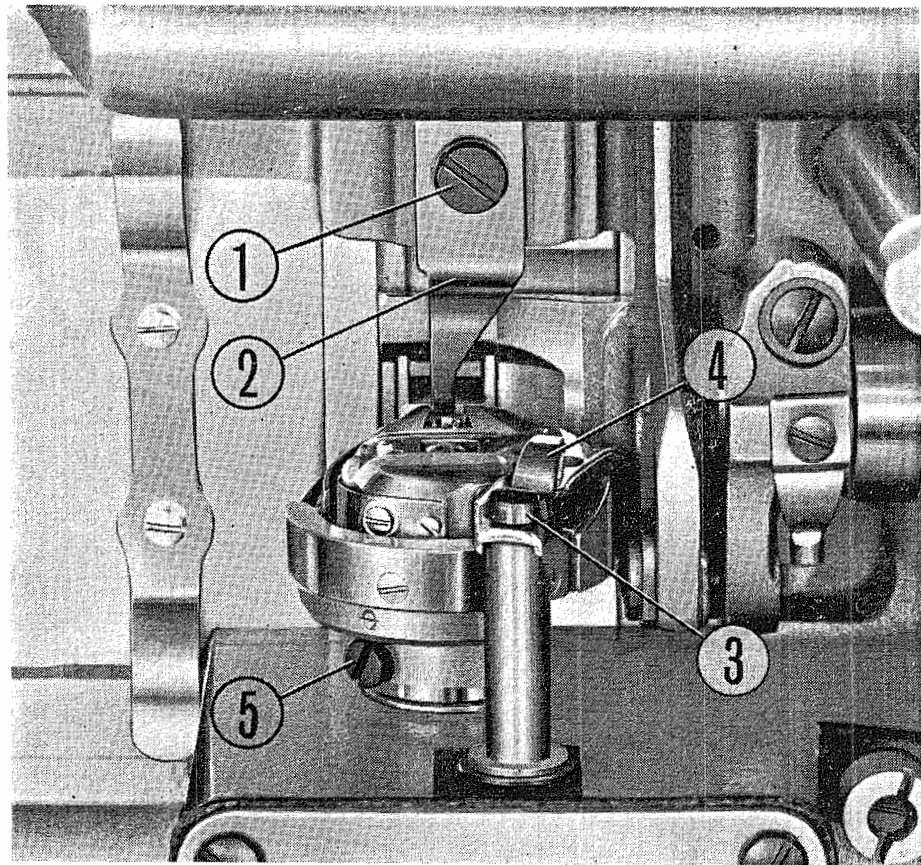


Fig. 10

## 2. Relation between the needle and the sewing hook

The relationship between the needle and the sewing hook is as shown in Fig. 11~14.

At first, if the installed position of the zigzag forked rod triangle cam which throws the needle bar is not correct, the so-called malfunction of "needle flow" occurs (when the needle is piercing the cloth, the needle sways sideways). Adjust the position of this cam as shown in Fig. 14 so that it will function properly.

To determine the position of the needle throw, remove the cap (Fig. 3 ②) near the arm thread guide bar, loosen the set screw of the bevel gear of the main shaft, and as you watch the needle drop, adjust the position by slowly sliding the position of the gear and at the correct position of the needle throw, tighten the set screw of the gear securely. (Fig. 11, 12, 13, 14).

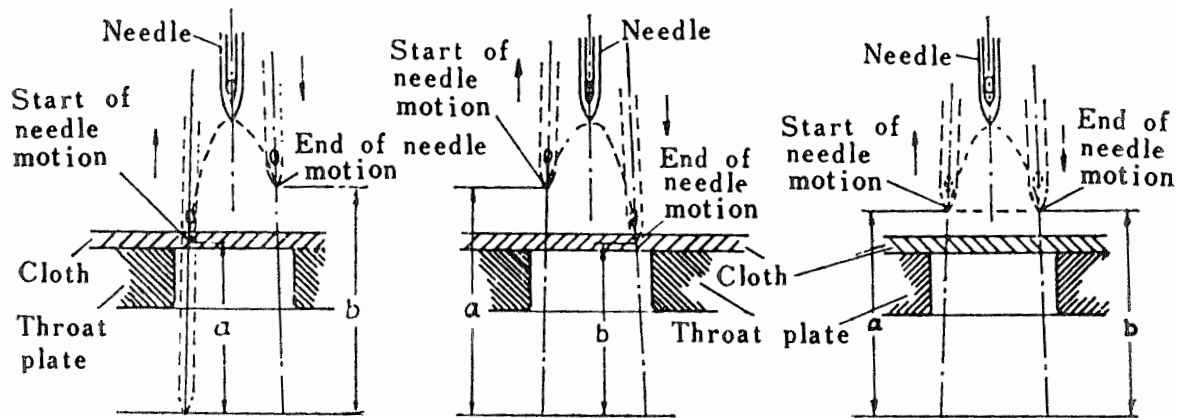


Fig. 11

Fig. 12

Fig. 13

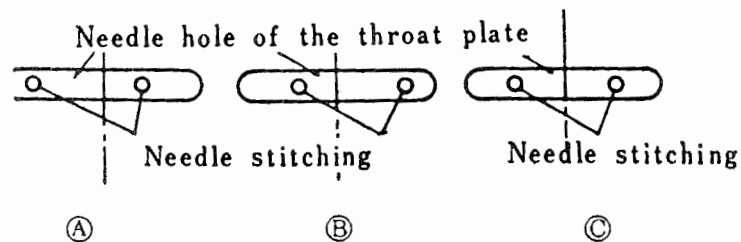


Fig. 14

Next, to adjust the position of the needle drop, as shown in Fig. 14, the needle should be so adjusted that it will drop not too far to left ① or too far to right ② but should throw uniformly to the center ③. This is the correct position of the needle drop position.

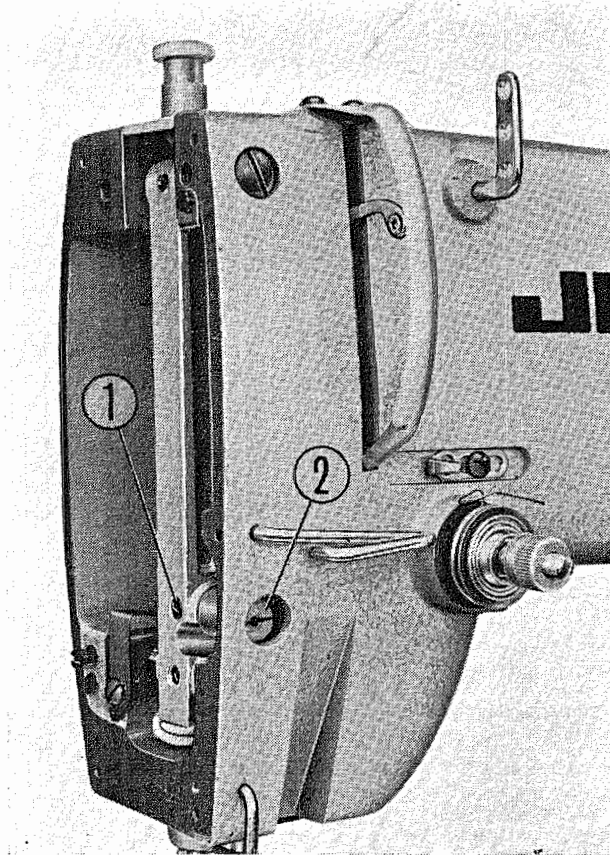
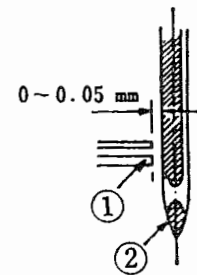


Fig. 15



- ① Hook point
- ② Needle

Fig. 16

To adjust to this correct position, loosen the eccentric shaft set screw (Fig. 15 ①) and if the eccentric shaft (Fig. 15 ②) is rotated by a screw driver, the needle will lean to right or left, so adjust with this eccentric shaft.

To match the sewing hook with the needle eye, it is necessary to see that no skip stitching should occur. The clearance between the sewing hook point and the needle should be 0—0.05mm as a standard. (Fig. 16)

The correct relation between the needle and the tip of the sewing hook should be such that with the width of throw at "0", bring the needle bar to the lowest position, match the indicated line above the needle bar with the lower part of the needle bar vibrating base and set the needle bar. Next, rotate the hand wheel and match the indicated line below the needle bar with the lower part of the needle bar vibrating base. At this point, install the sewing hook in such a way that the center of the needle and the point of the sewing hook match each other.

Thus, when the needle has risen to 1.75mm above its lowest point, the center of the needle and the point of the sewing hook should coincide and the clearance between the upper part of the needle eye and the point of the hook becomes 1.6—1.7mm. (Fig. 17)

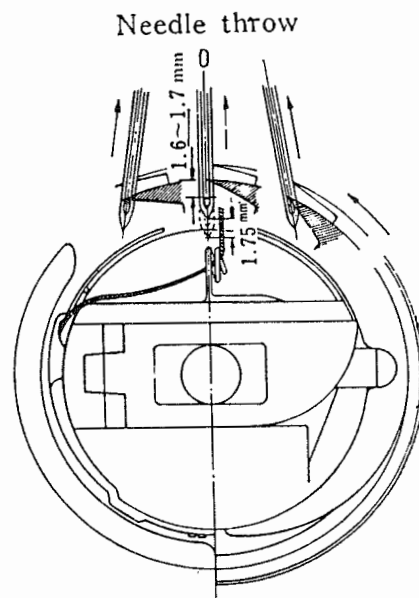


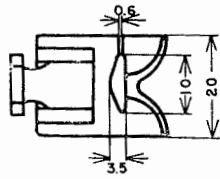
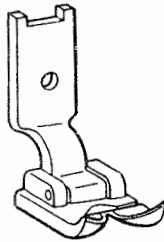
Fig. 17

**\* Winding amount of the bobbin thread**

The bobbin thread should be wound about 70% during the sewing.

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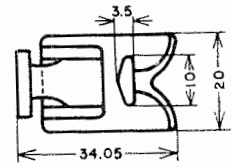
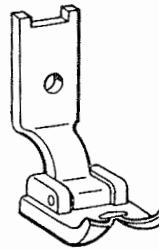
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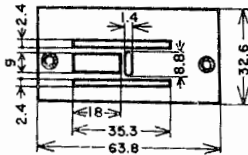
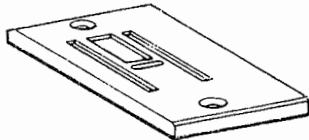
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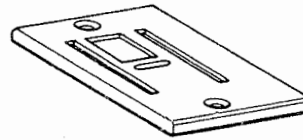
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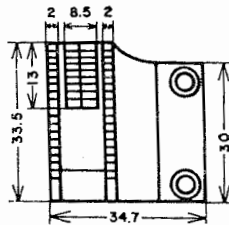
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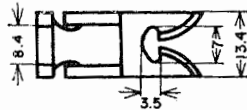
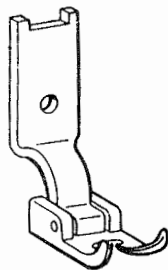
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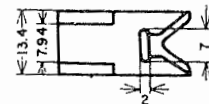
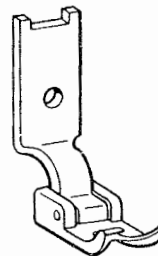
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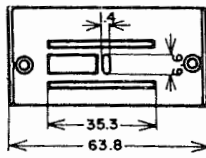
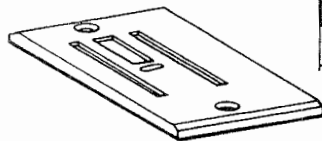
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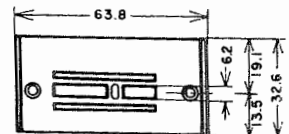
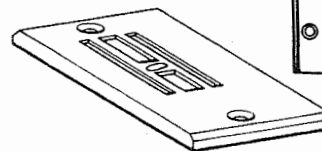
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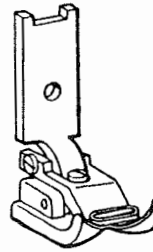
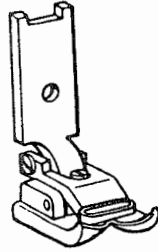


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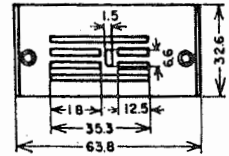
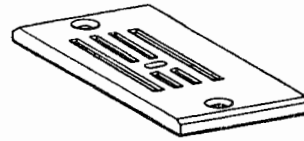
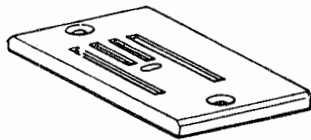
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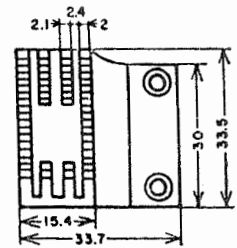
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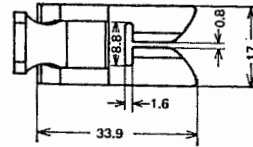
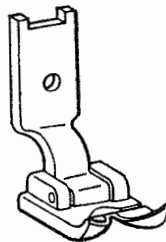


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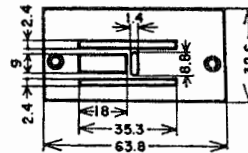
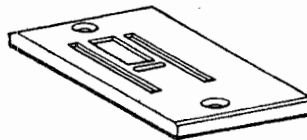
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LZ-586

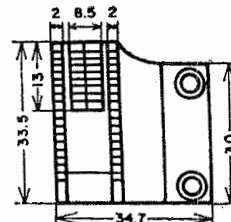
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B-1524-586-FA0



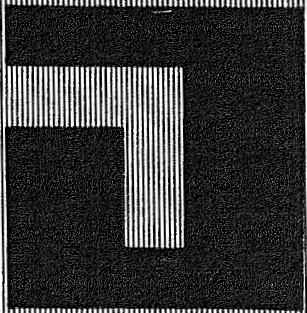
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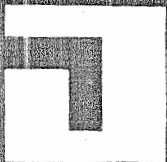
B-1613-582-000

LZ-586 LIST OF EXCHANGING PARTS

No.	Model	Needle Plate	Presser Foot	Feed dog	Width of Throw	Usage & Remarks
1	LZ-582	B-1109-582-000	B-1524-582-0A0	B-1613-582-000	6 mm (1/4")	Standard parts
2	"	" "	B-1524-582-CA0	" "	"	For garments requiring stepped stitches
3	"	B-1109-582-D00	B-1524-582-DA0	B-1613-582-D00	5 mm (3/16")	For light weight materials
4	"	B-1109-582-E00	B-1524-582EA0	B-1613-582-E00	"	For overseaming
5	"	B-1109-582-F00	B-1524-582-FA0	B-1613-582-F00	6 mm	For spun tex materials
6	"	B-1109-582-M00	B-1524-582-MA0	B-1613-582-M00	5 mm	Standard type parts
1	LZ-583	B-1109-583-000	B-1524-583-0A0	B-1613-583-000	4 mm (5/32")	Standard parts
2	"	" "	B-1524-583-BA0	" "	"	For medium heavy materials requiring stepped stitches
3	"	" "	B-1524-583-CA0	" "	"	For light weight materials requiring stepped stitches
4	"	B-1109-583-E00	B-1524-583-EA0	B-1613-583-E00	4 mm	For heavy weight materials requiring stepped stitches
5	"	B-1109-583-FA0	B-1524-583-FA0	B-1613-583-F00	"	For light weight materials tricot run stitches
6	"	B-1109-583-GA0	B-1524-583GA0	B-1613-583-G00	3 mm (1/8")	Light weight materials, overseaming
7	"	B-1109-583-H00	B-1524-583-HA0	B-1613-583-H00	2 mm (1/16")	Light weight materials zigzag width 2mm
8	"	B-1109-583-D00	B-1524-583-JA0	B-1613-583-D00	3 mm	Extreme light weight materials Zigzag width less than 3 mm
9	"	" "	B-1524-583-JB0	" "	3 mm	Extreme light weight materials Zigzag width less than 3mm
10	"	" "	B-1524-583-KA0	" "	"	Light weight materials Zigzag width less than 3mm
11	"	" "	B-1524-533-KB0	" "	"	" " "
12	"	B-1109-583-E00	B-1524-583-LA0	B-1613-583-E00	"	Light weight materials Overseaming width of throw 3mm
1	LZ-586	B-1109-582-F00	B-1524-586-FA0	B-1613-586-F00	6 mm (1/4")	Standard parts



**TOKYO JUKI**



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