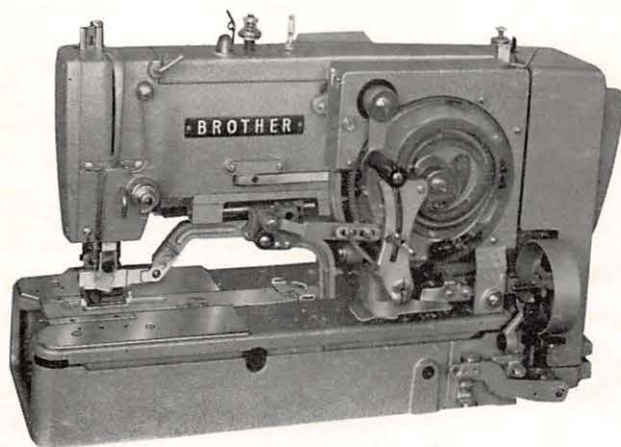


INSTRUCTION MANUAL
FOR
BROTHER MODEL LH4-B814-1,-2,-3



High Speed Buttonhole Sewing Machine

BROTHER INDUSTRIES, LTD.

NAGOYA, JAPAN.

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1. FEATURES AND SPECIFICATIONS

1. Main Specifications

Model	LH4-B814 single needle lock stitch buttonholer		
Sub-class	- 1	- 2	- 3
Use	general materials	general materials	knitted materials
Max. sewing speed	3,300 spm		
Length of buttonhole	6.4mm~25mm($\frac{1}{4}$ "~1")	6.4mm~32mm($\frac{1}{4}$ "~1 $\frac{1}{4}$ ")	6.4mm~32mm($\frac{1}{4}$ "~1 $\frac{1}{4}$ ")
Width of buttonhole	2mm~4mm($\frac{5}{64}$ "~ $\frac{5}{32}$ ")	2mm~6mm($\frac{5}{64}$ "~ $\frac{15}{64}$ ")	2mm~6mm($\frac{5}{64}$ "~ $\frac{15}{64}$ ")
Tape winding device	Nil	Equipped	Equipped
Feeding mechanism	upper	upper & lower	upper & lower
Buttonhole stitches	60~360 stitches		
Height of presser foot	15mm($\frac{19}{32}$ ")	13mm($\frac{33}{64}$ ")	12.5mm($\frac{1}{2}$ ")

2. Stitch formation

- 1) Whip stitch. . . .same stitch formation as ordinary lock stitch zigzag formation, namely, zigzag stitch of upper thread on top and zigzag stitch of lower thread on bottom.
- 2) Purl stitch. . . .Strong tension on upper thread applied, thus, the upper thread seems to be straight raised up on the lower thread. This is applied for buttonhole works on shirts, pyajamas and the like. This model LH4-B814 can be done either whip stitch or purl stitch, depending on, the sewing materials, and it is generally used with purl stitch buttonhole on shirts, pyajamas and the like, and used with whip stitch buttonhole on knitted fabrics.
With this machine, if it is used with purl stitch, both ends of buttonhole, portion of bar tacking can be done with whip stitch in order to be able to get the beautiful and stable quality of buttonholes. As mentioned above, on the knitted fabrics and jerseys, it is recommended to do with whip stitch. It is very easy to change the stitch formation from purl stitch to whip stitch only by changing the tension on the upper thread tension regulator.

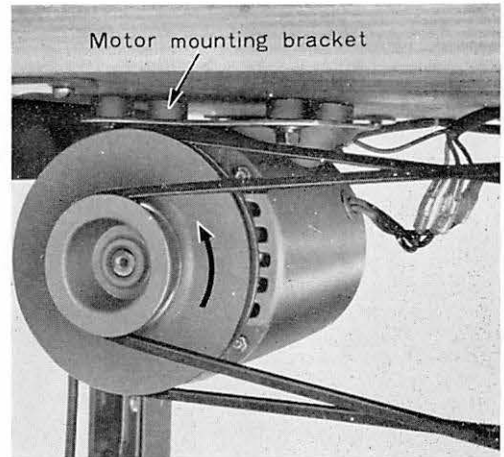
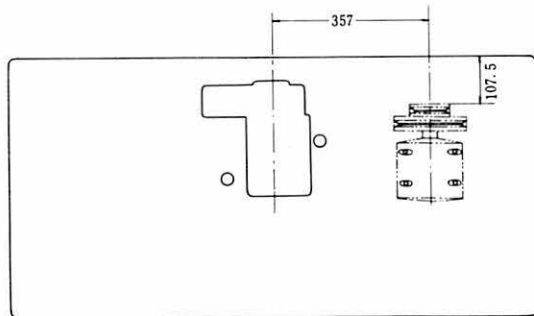
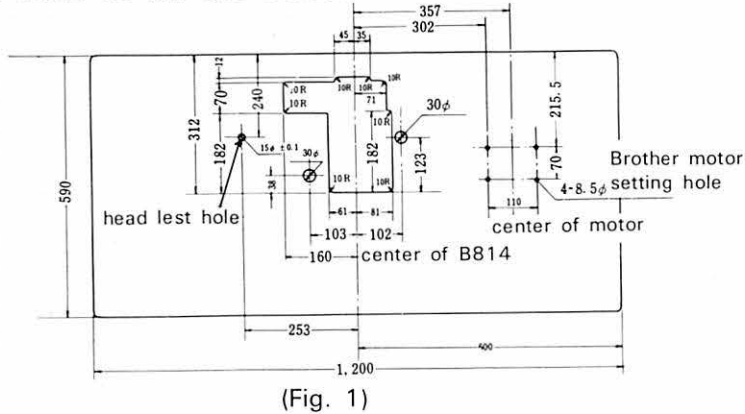
3. Features

- 1) This model is very fast to sew and can be obtained good quality buttonholes with easy adjustments.
- 2) Automatic lubrication can avoid the oiling to the machines in every morning.
- 3) It can raise up the productivity as it ensures less thread breaks and thread off.
- 4) Wide working space can ensure easy sewing operation.
- 5) A specially selected belt makes no fine adjustment of belt tension.
- 6) An automatic knife locking device enables to prevent the materials from damage in case of the thread breakage.
- 7) Specially designed speed reduction mechanism enables noiseless and less vibration works.
- 8) It is very easy to change the length, width of buttonholes, number of stitches and amount of oil.
- 9) Emergency instant stop lever can guarantee the long durability of this machine and also can protect the breakage of important parts.
- 10) Bobbin winding can be done even if machine stops.
- 11) The applicable thickness of the materials is ensured upto 4.5~5mm.
- 12) This machine is equipped with adjustable rulers either to the direction of back and forth or left and right.



2. SETTING UP AND RUNNING

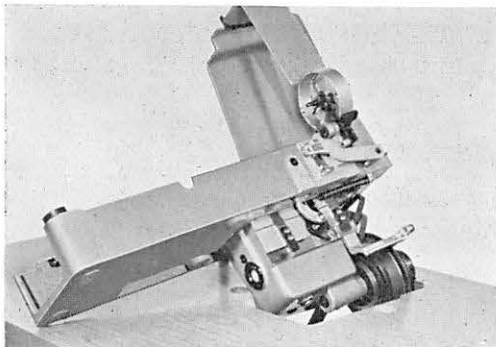
1. How to fix the motor



Firstly, put the two speed pulley which is supplied with the machine head to the motor shaft and set the position apart 357mm from the centre of the machine. Set the position apart 107.5mm from the edge of the table top to the end of pulley as shown in Fig 2. Drill the holes at the correct position. Secondly, put the motor to table top. At that time, please make sure to insert the washers between table top and motor mounting bracket and fasten securely with set bolts.

The correct motor rotation is counter clockwise viewed from the pulley side and if not, please get the correct rotation.

2. Setting the machine head on table top



1) Set the base.

Put the base on the table top as per Fig. 4 and put two belts as shown in Fig. 3. In the district of 50 Hz, use with 42" for larger diameter pulley and 43" for smaller diameter pulley. In the district of 60 Hz, use with both 41"s.

At the proper tension of two belts, fasten the base with wood screws to table top securely.

Unless you may put the position correctly, it causes to lessen the life of belts.

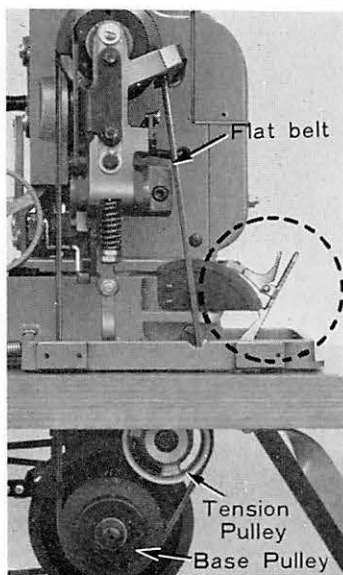
2) Put the hinges in the bed and place the machine head on the base.

3) Put the tension pulley as shown in Fig. 5.

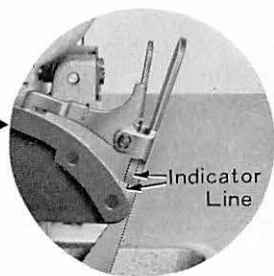
4) Put the head rest.

5) As shown in Fig. 6, connect the oil tubes with tube joint.

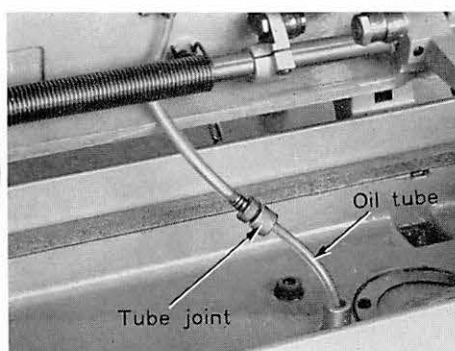
Then, put the flat belt between base pulley and tension pulley as shown in Fig. 5.



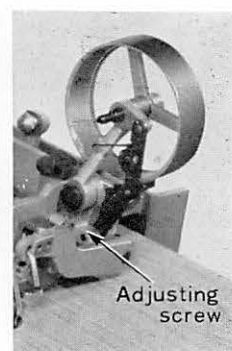
(Fig. 5)



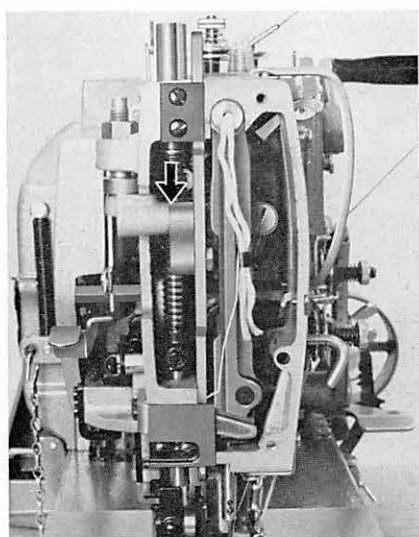
(Fig. 6)



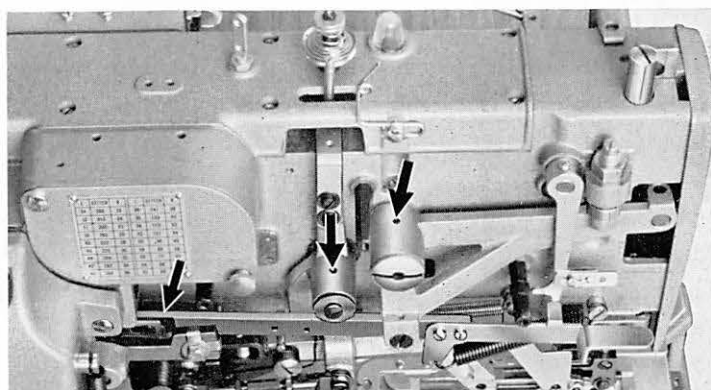
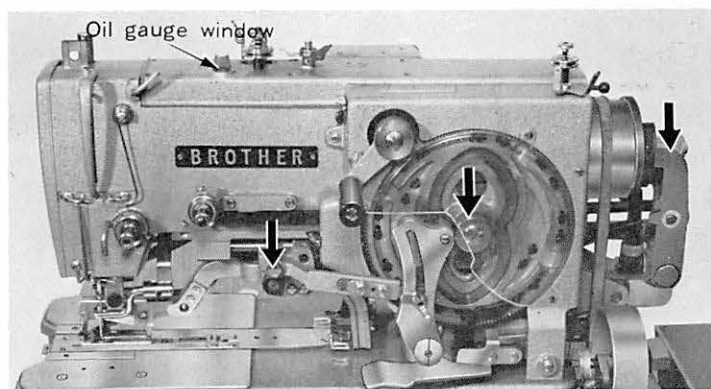
(Fig. 7)



- 6) Put the bobbin winder assembly as per Fig. 7. At that time, please make sure to be right angle between belt and pulley. This is because you can get the even bobbin winding when you may wind the bobbin threads on bobbin actually. The fine adjustment can be done at the position of thread guide.
- 7) Put the belt cover with flat head screws.
- 8) Put the flat belt to the machine pulley and push the tension lever and release it at the position in line with indicator.

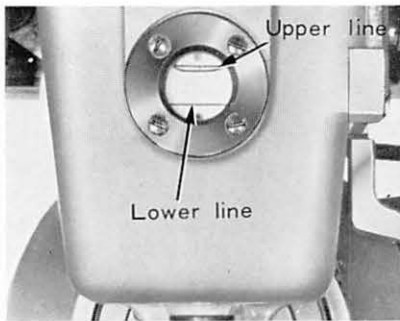


(Fig. 8)

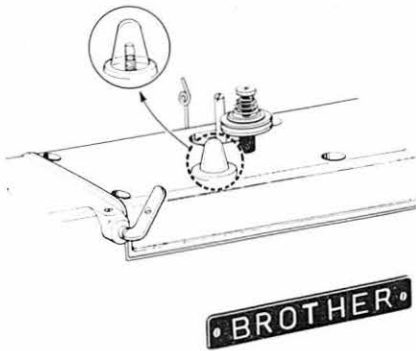


(Fig. 9)

- 9) All the above procedures are completed, then pour oil into the oil reservoir and oil to the sliding parts taking off the face plate, side cover and belt cover. Please also make sure to wipe out all the dusts of packing in transit, if any. (Figs 8. 9)



(Fig. 10)



(Fig. 11)

10) Oiling into oil reservoir.

This model is constructed that oil reservoir is a part of bed plate which is seen underneath the table top. Oiling is made as per Fig. 6 and pour oil onto the oil filter.

Pour oil until the upper line of oil gauge window.

Check in the oil gauge window before starting jobs whether proper oil is contained or not and in case that oil may show under the lower line, fulfil oil properly.

11) Checking the lubricating system.

Turn the oil flow regulating valve on the right side of the bed with a screwdriver so that when the motor is switched on oil may be visible in the pipe in the oil gauge window in the top cover. (Fig. 11)

3. HOW TO USE THE MACHINE

1. Cleaning up

It is absolutely necessary to maintain the hook and race cleaning up in order to get the beautiful buttonhole stitches. Please remove all the dusts and lints to get the constant beautiful stitches.

- 1) Remove all the dusts or lints which will be accumulated between needle plate and hook at least once a day after job finish.
- 2) Remove all the dusts or lints which will be accumulated on the presser foot and thread trimming mechanism whenever you may recognize the necessity.

2. Needle and its setting

Model LH 4-B 814 is used with DP \times 5 needle.

Use the needle as thin as possible. It must be matching the thickness of thread and needle eye so that the thread may pass through the needle eye smoothly.

In general, for purl stitch, the recommended needle size is upto #11, whereas for whip stitch, upto #9.

To set the needle to the needle bar, please refer to Fig. 12. Short groove in front of you and fasten the needle set screw confirming that the needle comes all the way upto the needle bar hole.

*The recommended angle of the needles is a bit left direction against the centre of needle bar. At this setting position, it is effective to eliminate skip stitches.

3. Selection of thread and threading

For good quality buttonholes, use for upper thread with only high grade threads, preferably cotton threads in size of #40-#60, 4-6 ply thread, left hand twisted, uniform in diameter without knot or slubs. This model LH 4-B 814 can be sewn with the synthetic threads as well as cotton threads.

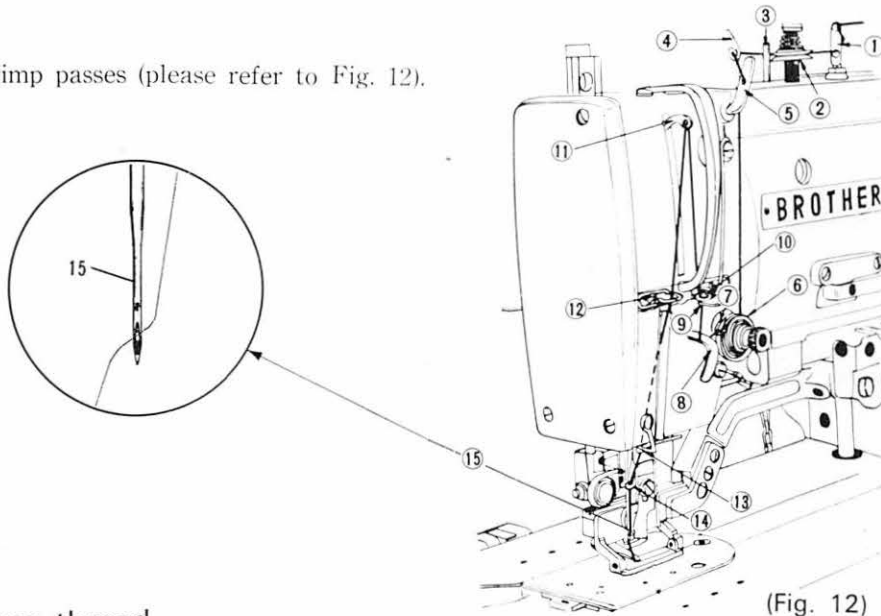
Right hand twisted thread or poor quality threads cause thread breakage which drop the productivity. Therefore, please make sure to use high grade threads to use with this machine.

Use for lower thread with high grade threads as well in size of #50-#100.

To thread the upper thread, please follow the following steps.

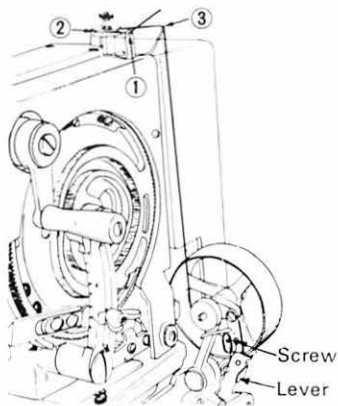
- | | |
|----------------------------------|--|
| 1) Thread retainer | 9) Thread breakage perceiving wire |
| 2) Upper tension regulator discs | 10) Arm thread guide |
| 3) Thread guide | 11) Thread take-up lever |
| 4) Upper thread guide | 12) Arm thread guide |
| 5) Thread retainer | 13) Arm thread guide |
| 6) Lower tension regulator discs | 14) Needle bar thread guide |
| 7) Thread take-up spring | 15) Needle (Please pass the thread to needle eye from behind the needle) |
| 8) Thread guide | |

● Threads and gimp passes (please refer to Fig. 12).



(Fig. 12)

4. Winding lower thread



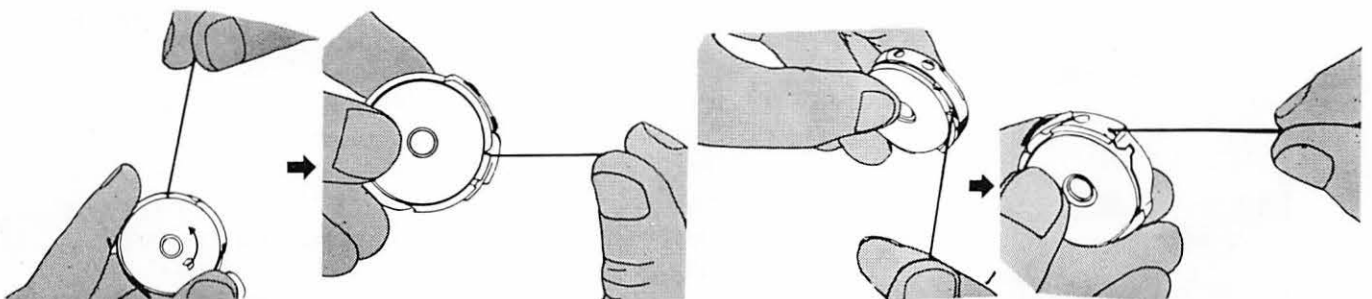
(Fig. 13)

For lower thread, it is recommended to use with #50-#100 cotton thread, but it can be assured to get sewing performance with synthetic threads as well.

To wind the thread in bobbin, please refer to Fig. 13. Wind 4-5 times around the empty bobbin counter clockwise, and push the lever to start to wind. When sufficient amount of threads will be wound, the bobbin winder will stop automatically. The amount of threads to be wound is adjusted by the screw.

5. Threading bobbin case

To thread on the bobbin case, please refer to Fig. 14, a. b. c & d.



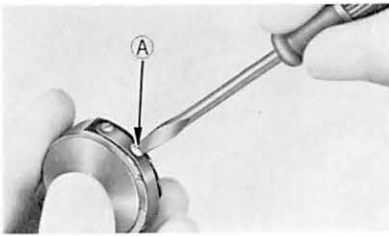
(Fig. 14a)

(Fig. 14b)

(Fig. 14c)

(Fig. 14d)

6. Regulating lower thread tension

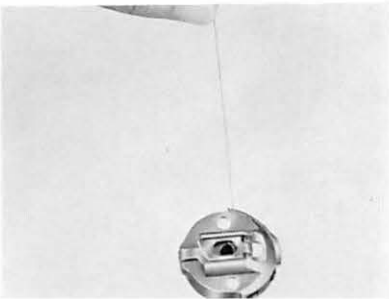


(Fig. 15)

It can be regulated the lower thread tension by adjusting the screw A.

In case that you may tighten the screw A, the tension will be stronger, and vice versa. The correct tension of lower thread is that when you pick the thread end, the bobbin will slowly go down by its own weight as per Figs 15, 16.

Please be careful not to have stronger tension in order to avoid thread breakage.



(Fig. 16)

7. Inserting bobbin case into hook



(Fig. 17)

Please refer to Fig.17 to insert the bobbin case into hook. At that time, please make sure to pull the thread end toward you in order to avoid thread jamming.

8. Running

When you will start the machine, please make sure to be normal stop position, that is, the stopper is engaged in the stopper cam. Unless you may be acquainted with this machine, please refrain the machine from starting by the motor. Fig 19.

The best way to comprehend the machine mechanism thoroughly, please start the machine by hand driving the pulley slowly to observe the respective movements. At first, remove thread, needle, bobbin case and cutter then start to run.

With left treadle pedal, you can lift the presser foot and with right treadle pedal, you can start the machine.

This machine is designed with safety device, which prevents the machine from starting while the presser foot is lifted and prevents the presser foot from lifting up while machine runs. Therefore, if you depress right treadle pedal on the half way of left pedal engagement, the machine will not start to run, and left treadle pedal will not engage in lifting presser foot while machine is running.

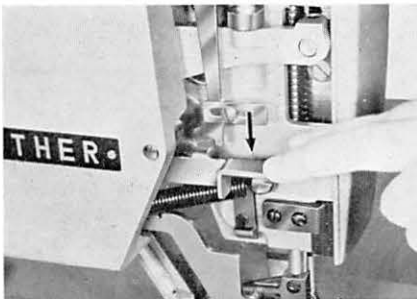
(NOTE) Please be careful that when machine is going to stop if you will depress left treadle pedal, the machine will not stop.

9. Operating cutter locking device

(1) On upper thread breaking

(2) On lower thread running out or thread breaking

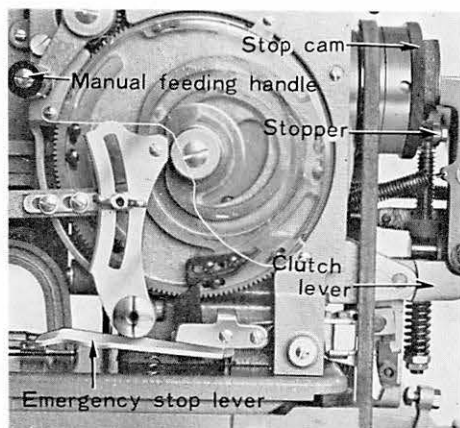
} you can have machine restart without cutting the buttonhole with cutter.



(Fig. 18)

With this model, LH 4-B 814 in case of (1) the cutter movement will be locked automatically and in case of (2), as the cutter will be engaged in, please depress the cutter stop lever until the machine stops automatically. With this step, it ensures to prevent the materials from damage and you can have machine restart. Fig 18.

10. Emergency stop



(Fig. 19)

It is essential to stop the machine instantaneously even if the machine runs when the needle breaks or thread jamming in the hook. This prevents the machine and materials from damage.

In this case, depress down the emergency stop lever by hand and release it. (This operation of the emergency stop lever means that machine speed will be reduced to 800 rpm by pressing the lever and will be reduced to zero by releasing the lever.)

11. Operating manual feeding handle

When you will use the emergency stop lever or when the thread breakage causes during its operation, you would like to restart the machine just before the defective stitch. At that time, turn the feed cam clockwise by means of this manual feeding handle at your desired position. Fig 19.

(NOTE) 1. At the repairing of this machine, on the condition that the stop cam may be off from stopper which is on the condition of depressing the right treadle pedal, after turning the pulley by hand, there causes sometimes the cutter being operated to drop at the machine starting to run. This can be avoided by starting the machine from normal stop position or depressing the cutter stop lever as shown in Fig. 18.

2. The manual feeding handle should be used when the needle is apart from the materials. It is safe to operate the manual feeding handle at that position that stop cam stops at the correct angle.

4. ADJUSTMENT

1. Regulating upper thread tension

This model LH4-B814 has two upper thread tension regulators. As shown in Fig. 12, the upper tension regulator plays a role of regulating the upper thread tension on the bar tacking on both ends of button-holes and the lower tension regulator on the parallel zigzag tension.

a) In case of purl stitch

- 1) Regulating the upper tension regulator, please obtain the tension so as to be whip stitch on the part of bar tacking.
- 2) Regulating the lower tension regulator, please obtain the tension so as to be straight raised stitch on the part of zigzag in parallel.

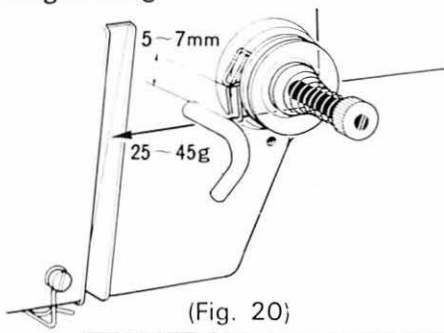
The stronger the tension, the more beautiful the seams. However, there exists the limit and if it will exceed the limit, it causes the upper thread breakage, so please be careful to obtain the proper tension.

b) In case of whip stitch

- 1) Tighten the tension of bobbin case and obtain the stronger tension in comparison with the tension for purl stitch.
- 2) Loosen the tension on lower tension regulator properly.

(NOTE) On whip stitch, same threads on upper and lower are recommendable.

2. Regulating the thread take-up spring



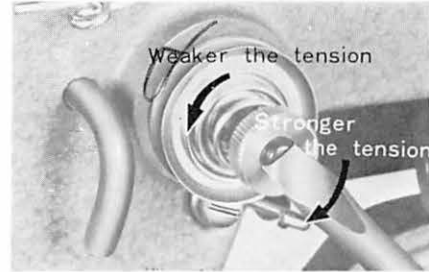
(Fig. 20)

This model LH4-B814 features that the thread take-up spring plays two roles, one for regulating the tension and the other for perceiving the upper thread breakage as well. Therefore, the amount of movement of take-up spring is recommendable in the range of 5~7mm for cotton thread and 2~3mm for synthetic thread. Please refer to Fig. 20.



(Fig. 21)

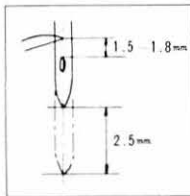
*When the height of thread take-up spring is incorrect position, loosen the screw and turn the upper tension regulator assembly.



(Fig. 22)

*The thread take-up spring must be adjusted to correct tension as weak as possible.
*To change the tension, turn the stud screw. Fig. 22.

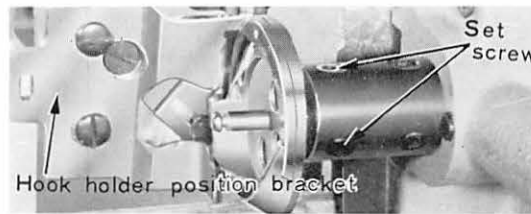
3. Timing the hook and needle



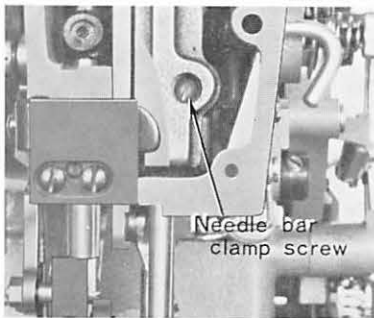
(Fig. 23)

To make adjustment of timing the hook and needle, please make sure to be at the position of the needle coming down to the centre of needle plate.

When the needle comes up 2.5mm from its lowest position, it is correct timing that the point of hook is located at behind the centre of needle. At that time, the correct height of needle bar is determined at the distance of 1.5~1.8mm between the point of hook and the top of needle eye. Fig. 23.



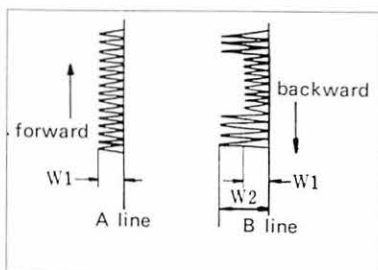
(Fig. 24)



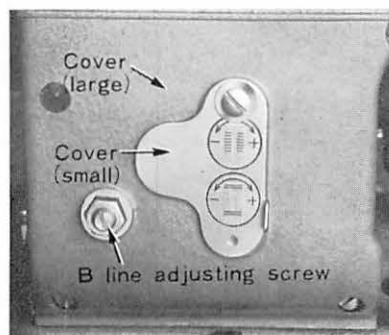
(Fig. 25)

- (1) To make adjustment of timing the hook, loosen the set screw as per Fig. 24.
- (2) To make adjustment of needle bar height, loosen the needle bar clamp screw. Fig. 25.

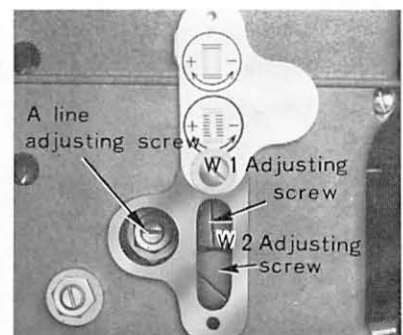
4. Adjusting the width of buttonhole and position of buttonhole



(Fig. 26)



(Fig. 27)



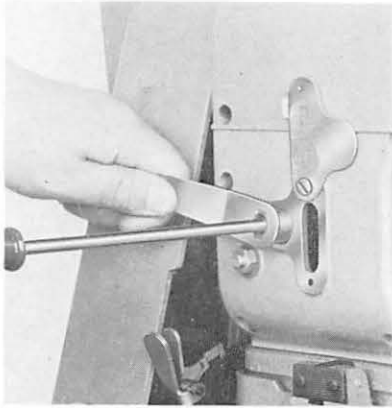
(Fig. 28)

(1) Needle swing ing.

This machine swings the needle from right to left either going forward or backward, for tacking on both ends. Fig. 26.

(2) Adjusting zigzag width W1 and W2. With W1 and W2 adjusting screws, turn to right (clockwise), the zigzag width will be wider, and turn to left (counter-clockwise), the zigzag width will be narrower. (Figs. 27, 28)

The width of zigzag and tacking can be adjusted by the adjusting screws to be larger or smaller. If you will loosen considerably the adjusting screw for bar tacking, you can obtain the gimp button-hole without bar taking.



(Fig. 29)

*Reference line A can be adjusted by opening the small cover, loosening the nut with the accessory tool, and turning the screw with a screwdriver inserted through the hole in the tool. Turning the screw clockwise moves the reference line leftward; and turning it the other way moves it rightward. (See Fig. 29)

*Reference line B can be adjusted by loosening the nut and turning the screw. Turning it clockwise moves the reference line rightward; and turning it the other way moves it leftward. (See Fig. 29)

(3) Adjusting procedure

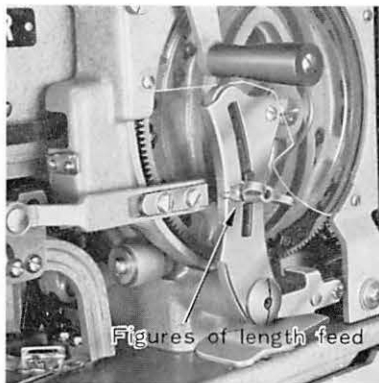
When the cutter goes down, after adjusting the A line not so as to break the sewn thread, adjust the zigzag width of parallel. Then, adjust the B line not so as to break the sewn thread of right zigzag in parallel. After completion of above-mentioned adjustment, adjust the width of bar tacking portions.

(NOTE) (1) By means of needle bar movement and pressing the materials with thread, when you will make adjustment by turning the pulley by hand, it causes a slight difference, therefore, please adjust the correct position with actual sewing.

(2) This machine is designed the needle swinging much more than the slot of work clamp therefore, please make sure the needle not to hit the presser foot when you may set the zigzag width of 4mm or more on bar tacking portions or after the removal of position lines on both backward and forward zigzag width of parallel portions.

After turning the pulley by hand, please make sure to use the emergency stop lever and set the machine to the normal stop position, namely, the stopper cam being positioned in the stopper. Then, start the machine.

5. Buttonhole slot and length



(Fig. 30)

If you determine the length of buttonhole, choose proper cutter and set the indicator to the figures of length feed. The figures are correspondent to the cutter length. (Fig. 30)

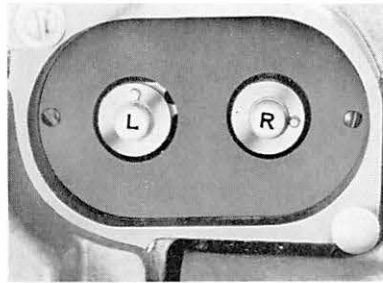
6. Number of stitches.

STITCH	R	L	STITCH	R	
4	360	22	38	147	38
12	310	24	36	133	40
21	300	25	34	119	42
30	283	26	32	107	44
48	252	28	30	96	46
60	229	30	28	86	48
84	203	32	26	77	50
119	182	34	24	68	52
147	164	36	22	60	54

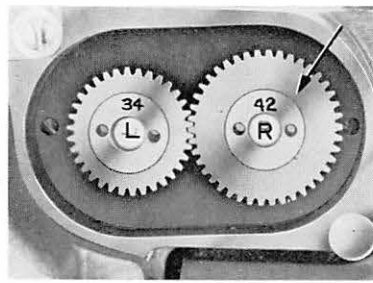
(Fig. 31)

Please use with this machine in proper numbers of stitches per cycle depending on the length of buttonhole.
You can obtain the predetermined number of stitches changing the combination of the gears including with this machine. (Fig. 31)

(1) Changing the number of stitches



(Fig. 32)



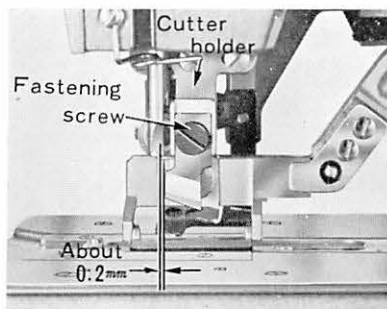
(Fig. 33)

Here is an example to obtain the desired number of stitches per cycle.

To obtain 119 stitches per cycle, please refer Figs. 32, 33.

- a. Put "34" gear into L shaft.
- b. Put "42" gear into R shaft turning gear slightly pushing and you can easily put it into the pinions within 180° rotation.
- c. Close the cover not so as to drop out.

7. Setting position of cutter



(Fig. 34)

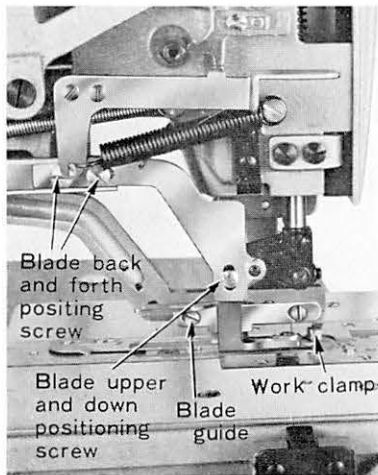
The position of cutter is adjusted by the movement of cutter holder. At that time, please make sure to have 0.2mm or more clearance between needle bar and cutter edge.

The height of cutter must be set as its lowest point (front) is 3mm below the needle plate surface on its way down. (Fig. 34)

8. Adjusting upper thread trimmer

The upper thread trimmer plays the following three roles.

- a. Trim the upper thread
- b. Hold the thread end after trimming
- c. Sewing on the thread end at the beginning of next buttonhole.

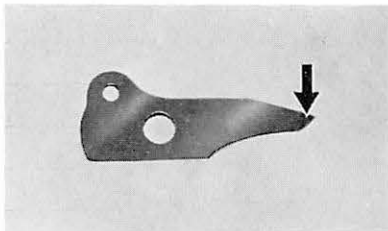


(Fig. 35)

- 1) a. If the trimming mechanism works properly without good trimming result, it is considered as the defect of back and forth position of the trimmer. At that time, loosen the screw and adjust the correct position.

- b. When the thread is trimmed and it remained the end of thread on the materials, the position of blades is considered to be too high.

Therefore, fix it to the work clamp as near as possible. (Fig. 35)

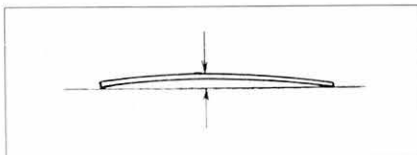


(Fig. 36)

- 2) a. If the thread is trimmed prior to the blade action, and it fails to hold the thread end, please remove the upper blade and reshape the blade as per Fig. 36.

- b. In case of thread off at the beginning of next buttonhole being trimmed correctly, it is considered to be weak spring action of upper blade or faulty shape, therefore, please remove and bend it so as to get the correct contact.

(Fig. 37)

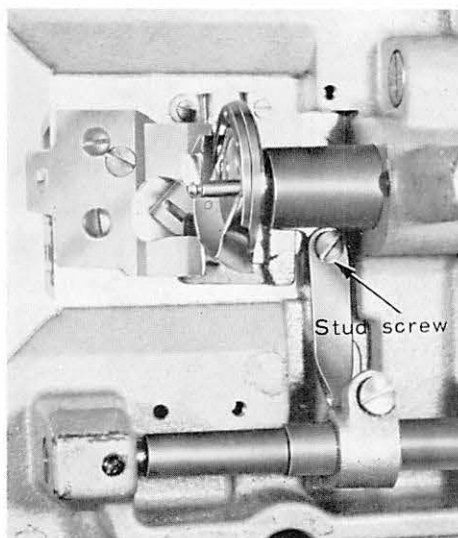


(Fig. 37)

- c. In case of failing to cover the thread end on the next buttonhole, it is considered to be earlier or later timing of blade opening.

Therefore, please correct the timing by moving blade guide back and forth. Pushing forward, the blade opening timing will be earlier and vice versa.

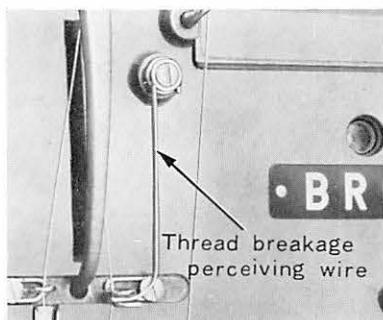
9. Replacing lower thread trimmer



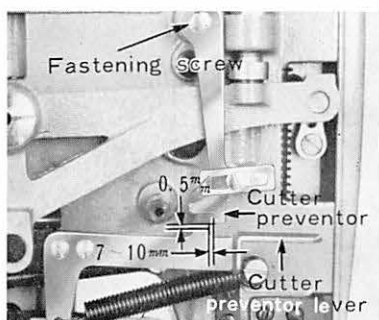
(Fig. 38)

If you will find that the lower thread trimmer knives are dull, unscrew the stud screw and needle plate screws as shown in Fig. 38, then remove the needle plate assembly and replace the defective parts thereof.

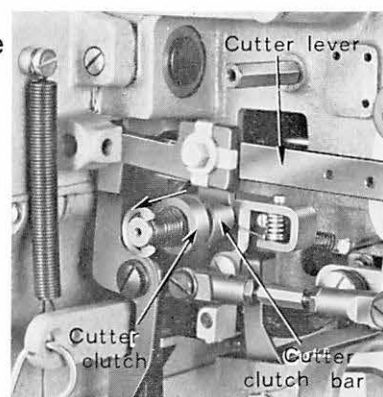
10. Adjusting automatic thread breakage perceiving device



(Fig. 39)



(Fig. 40)

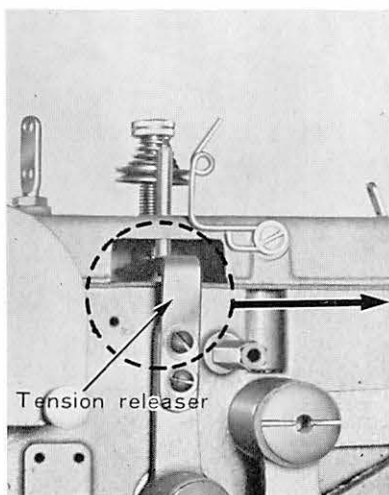


(Fig. 41)

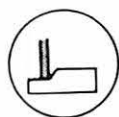
If the relative position between cutter preventor and thread breakage perceiving wire will be out of order, although the upper thread does not break, the cutter will not drop in some occasions. In this case, please make sure to be as per Fig. 39 on the condition of correct threading and correct tensions. This relation can be obtained by adjusting the fastening screw as per Fig. 40 loosened.

Also the correct relation between cutter preventor and cutter preventor lever must be adjusted so as to be 0.5mm clearance as per Fig. 40 when the cutter clutch bar moves to the direction shown arrow mark, and cutter lever removes from cutter clutch to cutter clutch bar. (Fig. 41)

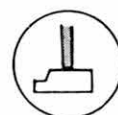
11. Releasing tension on main tension regulator



(Fig. 42)



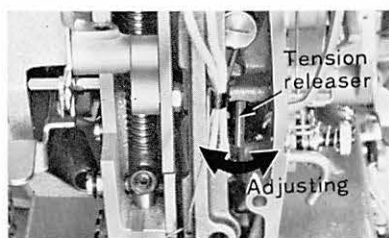
High speed Sewing



Stop position

The thread on main tension regulator is tight at high speed sewing, releases 0.5mm clearance at low speed sewing and releases freely at stop position. This can be adjusted by setting the upper tension releaser. (Fig. 42)

12. Releasing tension on lower tension regulator

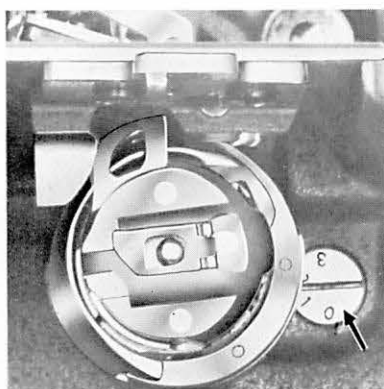


(Fig. 43)



(Fig. 44)

13. Adjusting oiling



(Fig. 45)

The thread on lower tension regulator can be released by the cam of tension releaser. This adjustment is obtained by loosening the adjusting screw as shown in Fig. 44 and moving tension release pin to the direction indicated arrow shown in Fig. 43 and set the tension discs to be 1mm gap.

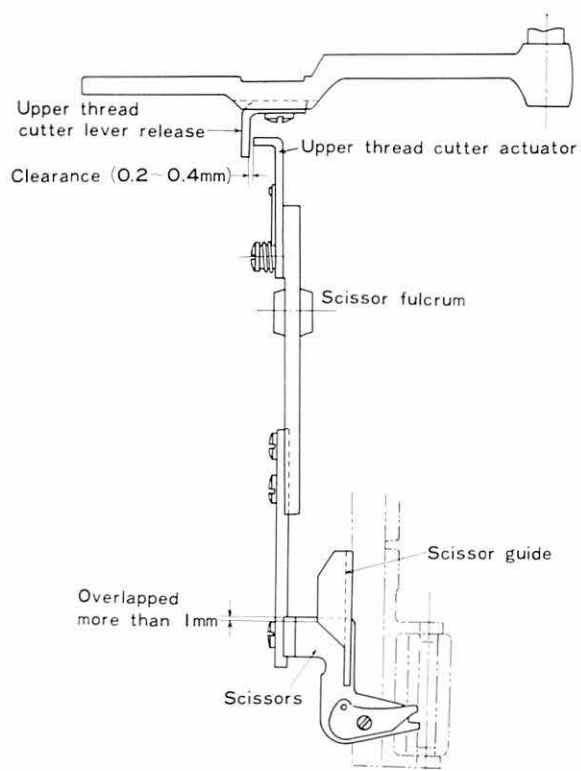
And the timing of tension release can be adjusted by the position of cam of thread tension release in the feed cam to be earlier or later.

- (1) This machine features automatic lubrication to all sliding parts and the adjustment of oiling to all those parts except to hook can be done by the adjusting screw located in the right of bed. This can be done by screw driver, and if you will turn clockwise, the oil feeds less and vice versa. Please make sure to adjust to lubricate to all necessary points with proper amount of oil feeding in order to avoid oil leakage due to much oil or seizing up due to less oil.
- (2) Adjusting oiling to hook can be done by moving the screw located in front of machine. Less oil to the hook is recommendable. (Fig. 45)

14. The cutter falls on the scissors:

* The scissors work before the machine stops so the cutter falls and is damaged.

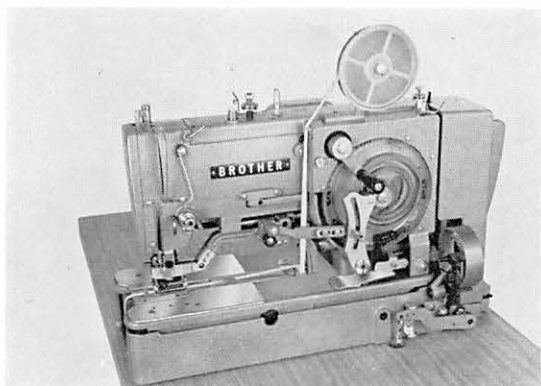
This kind of trouble occurs when the scissors are not set in the correct position. To adjust it, first turn the cam drive handle from the normal stop position of the machine until the scissor guide overlaps with the scissors as much as 1mm or more. Then adjust the position of the upper thread cutter lever release until there is a clearance of 0.2–0.4mm between the upper thread cutter lever release and the upper thread cutter actuator. (Fig. 46)



(Fig. 46)

15. Installing the tape winder (Applicable to the LH4-B-814-2 & -3 specifications)

* When sewing elastic fabrics such as knittings, use a tape on the wrong side of the fabric to reinforce holes.



(Fig. 47)

5 TROUBLE SHOOTING

1. Thread breaks

- a. Needle blunt or bent
- b. Needle too thin
- c. Needle plate damaged
- d. Poor quality of thread used
- e. Too strong tension on upper thread
- f. Improper threading
- g. Hook point damaged
- h. Out of timing the hook
- i. Dusts or lints in hook

2. Stitch skipping

- a. Needle bent
- b. Incorrect setting the needle, height and angle
- c. Too thick or thin needle size
- d. Out of timing the hook and needle

3. Threading off

- a. Weak spring action of blades
- b. Incorrect trimming upper thread by upper blade
- c. Uneven lower thread winding or too strong tension on bobbin
- d. Too much or less clearance between hook and hook position bracket
- e. Out of timing the hook

4. Threading off

- a. Weak spring action of blades
- b. Incorrect trimming upper thread by upper blade

5. Irregular stitch at beginning

- a. Upper thread blade position too high
- b. Incorrect position of sub tension release cam

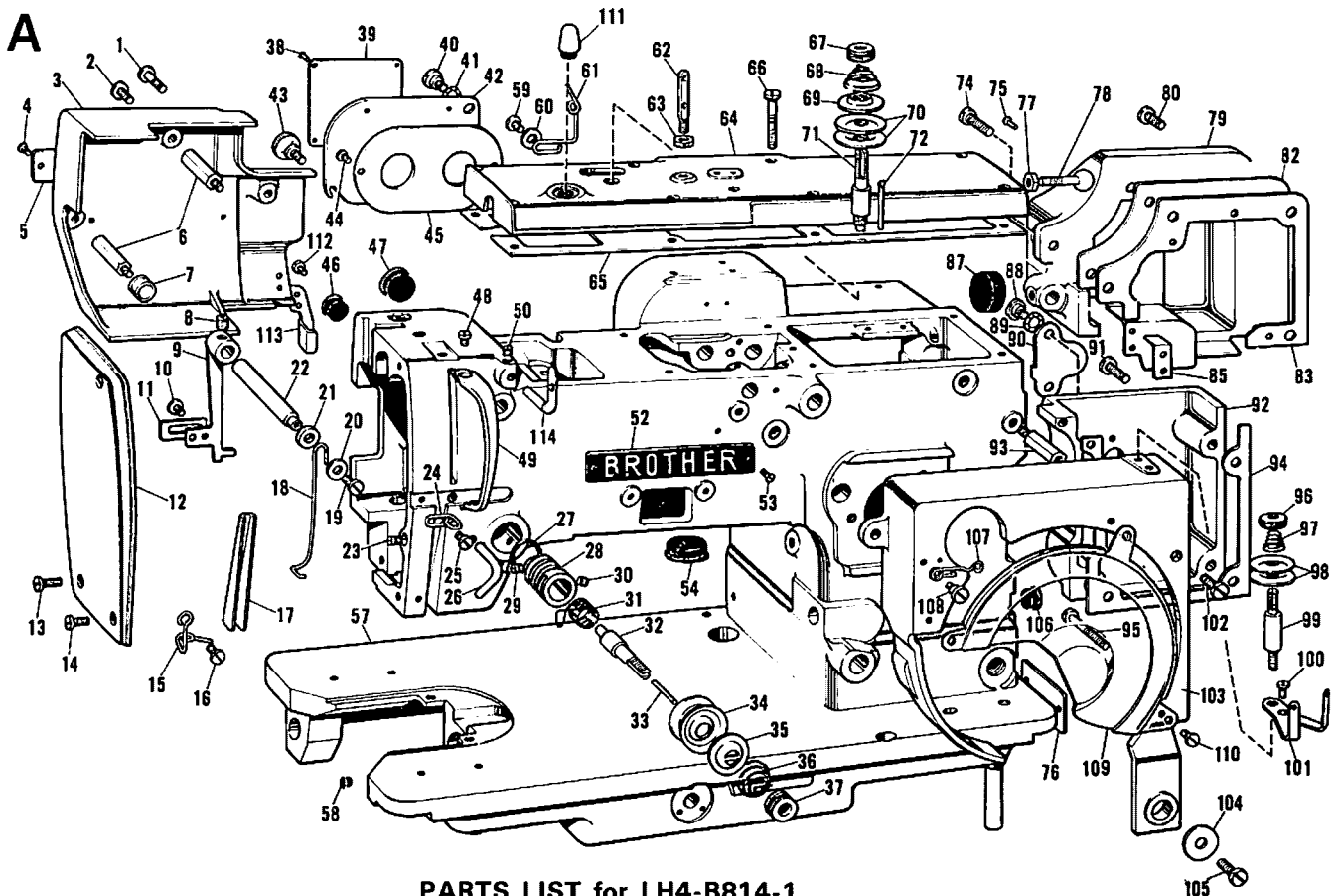
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	E-36		141262-0-01	A-6		141373-0-01	-			I-49	
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	J-32		141265-0-01	A-39		141375-0-00	-			K-63	
	K-37		141266-0-01	A-103		141376-0-00	-			K-65	
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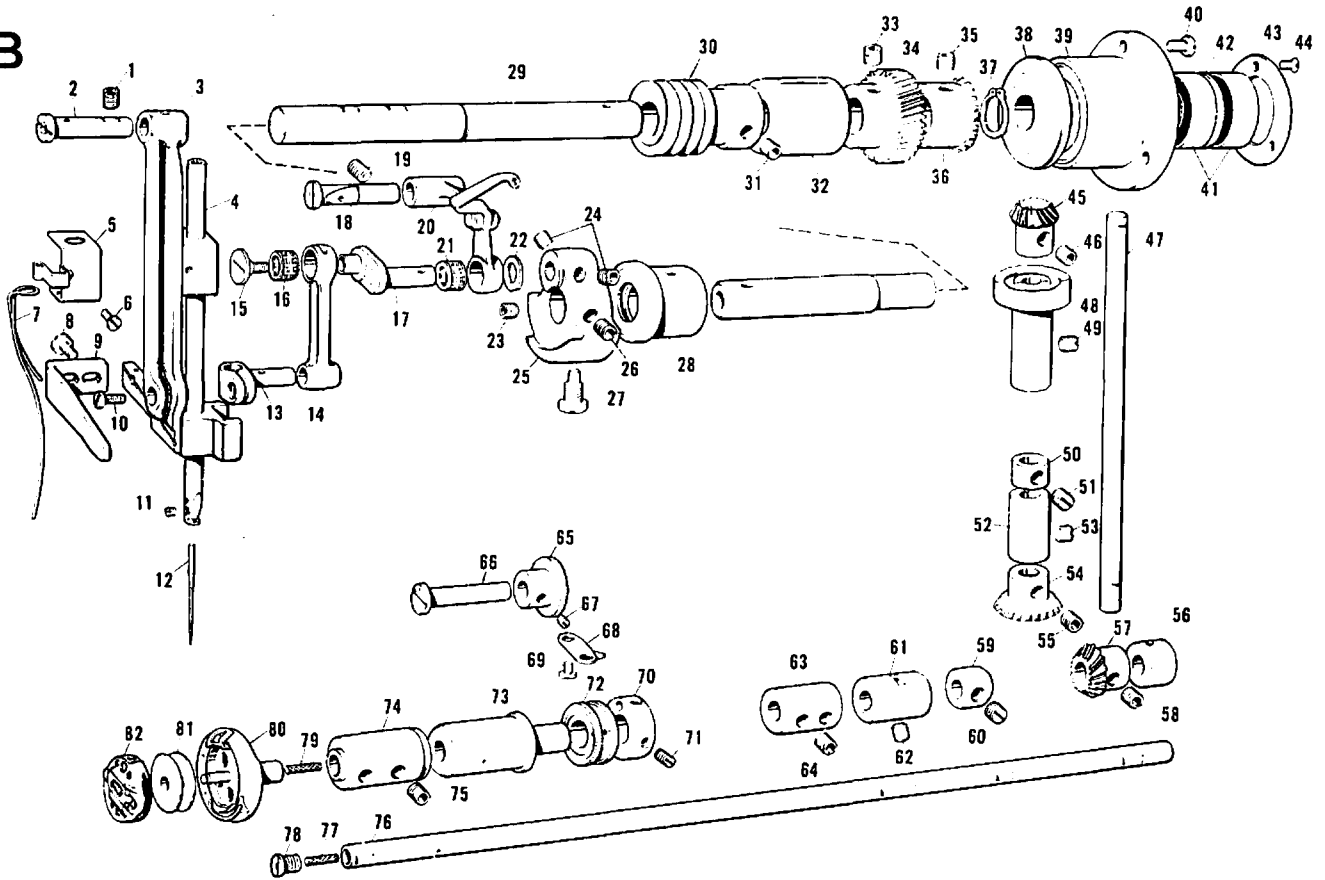
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
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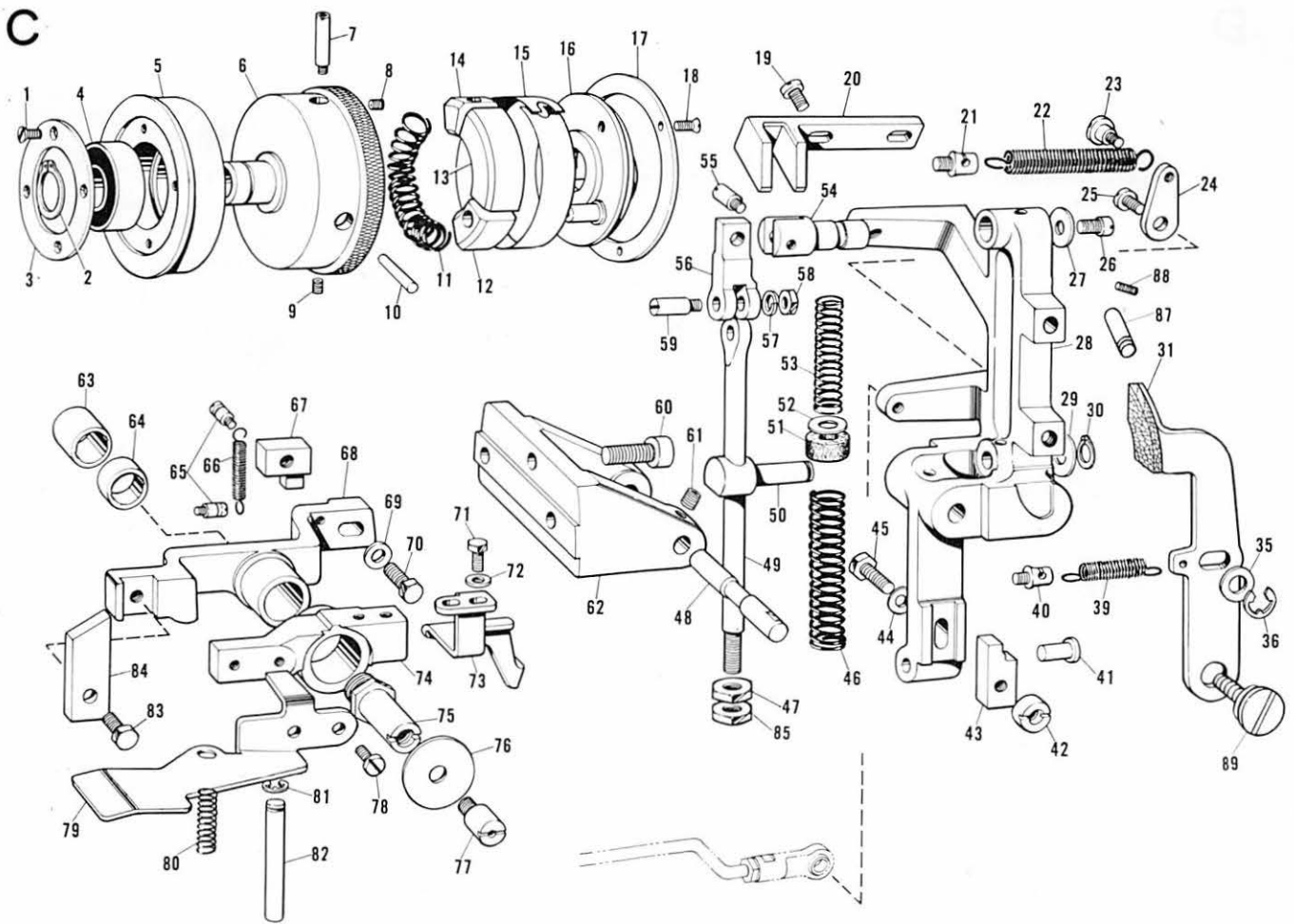
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A-1	Set screw for A-3	2 pcs.	100086-0-06		A-59	Set screw for A-61	1 pce.	100644-0-01	
A-2	Set screw SM4.37-40×20	1 pce.	009682-0-14		A-60	Washer SM4.37	1 "	025680-2-34	
A-3	Rear cover	1 "	141261-0-01		A-61	Thread guide	1 "	141593-0-01	
A-4	Set screw for A-5	2 pcs.	100191-0-03		A-62	Thread retainer (upper)	1 "	141590-0-01	
A-5	Name plate (60)	1 pce.	112547-0-01		A-63	Nut for A-62	1 "	107114-0-01	
A-6	Set bolt A-3	3 pcs.	141262-0-01		A-64	Top cover	1 "	141243-0-01	
A-7	Vinyl tube 7×8	1 pce.	117258-0-01		A-65	Top cover packing	1 "	141244-0-01	
A-8	Set screw cor A-9	1 "	100289-0-04		A-66	Set screw for A-64	8 pcs.	102424-0-02	
A-9	Cutter bar fixed plate	1 "	141619-0-01		A-67	Tension control nut	1 pce.	100136-0-01	
A-10	Set screw for A-11	1 "	101671-0-01		A-68	Tension spring	1 "	117215-0-01	
A-11	Balance for A-9	1 "	141620-0-01		A-69	Tension disc washer	1 "	100134-0-01	
A-12	Face plate	1 "	141260-0-01		A-70	Tension disc	2 pcs.	145446-0-01	
A-13	Set screw SM4.37-40×14 for A-12	2 pcs.	009681-4-14		A-71	Upper tension stud	1 "	107602-0-01	
A-14	Set screw SM4.37-40×10 for A-12	1 pce.	009681-0-14		A-72	Tension release pin	1 "	107612-0-01	
A-15	Arm thread guide (lower)	1 "	141595-0-01		A-74	Set screw SM5.95-28×20 for A-79	3 pcs.	009762-0-13	
A-16	Set screw for A-15	1 "	107491-0-02		A-75	Set pin for A-76	2 "	116231-0-01	
A-17	Thread guide	1 "	141594-0-00		A-76	Model plate for B814-1	1 pce.	143229-0-01	
A-18	Thread breakage perceiving wire	1 "	141614-0-01		A-76	Model plate for B814-2	1 "	143763-0-01	
A-19	Set screw for A-18	1 "	112751-0-01		A-76	Model plate for B814-3	1 "	143764-0-01	
A-20	Washer for A-19	1 "	025350-3-34		A-77	Nut for A-68	1 "	105234-0-03	
A-21	Collar for A-22	1 "	141617-0-01		A-78	Belt cover stopper	1 "	141248-0-01	
A-22	Thread breakage perceiving wire bar	1 "	141616-0-01		A-79	Sub shaft cover upper	1 "	141249-0-01	
A-23	Set screw SM4.76-32×10 for A-26	1 "	013711-0-10		A-80	Set screw SM5.95-28×14 for A-79	1 "	009761-4-13	
A-24	Arm thread guide (upper)	2 pcs.	142735-0-01		A-82	Sub shaft inside cover	1 "	144946-0-00	
A-25	Set screw for A-24	2 "	112751-0-01		A-83	Packing (large) for A-82	1 "	141252-0-00	
A-26	Tension thread guide	1 pce.	142733-0-01		A-85	Packing (small)	1 "	142269-0-00	
A-27	Packing for A-28	1 "	114294-0-01		A-87	Oil cap	1 "	116725-0-01	
A-28	Tension bracket	1 "	144741-0-01		A-88	Stud screw for A-90	1 "	107321-0-01	
A-29	Set screw for A-32	1 "	100402-0-02		A-89	Spring washer for A-88	1 "	107017-0-01	
A-30	Set screw for A-28	1 "	103950-0-02		A-90	Cap	1 "	143985-0-01	
A-31	Thread take-up spring	1 "	100399-0-01		A-91	Set screw SM5.95-28×20 for A-92	3 pcs.	009762-0-13	
A-32	Tension stud	1 "	100398-0-01		A-92	Sub shaft cover lower	1 pce.	143984-0-01	
A-33	Tension release pin	1 "	100400-0-00		A-93	Cam cover set bolt	1 "	141267-0-01	
A-34	Tension disc	2 pcs.	145446-0-01		A-94	Packing for A-92	1 "	141254-0-01	
A-35	Tension disc washer	1 pce.	100134-0-01		A-95	Set screw for A-92	1 "	102023-0-01	
A-36	Tension spring	1 "	107606-0-01		A-96	Bobbin winder tension control nut	1 "	107682-0-01	
A-37	Tension control nut	1 "	100136-0-01		A-97	Spring	1 "	107681-0-01	
A-38	Set pin for A-39	4 pcs.	041170-2-04		A-98	Disc	2 pcs.	107680-0-01	
A-39	Diagram for numbers of stitch	1 pce.	141265-0-01		A-99	Stud	1 pce.	107678-0-01	
A-40	Stud screw for A-42	1 "	107321-0-01		A-100	Set screw for A-101	1 "	107407-0-02	
A-41	Spring washer for A-40	1 "	107017-0-01		A-101	Bobbin winder thread guide	1 "	141600-0-01	
A-42	Gear case cover	1 "	141264-0-01		A-102	Set screw for A-103	2 pcs.	100086-0-06	
A-43	Set screw for A-42	1 "	100008-0-03		A-103	Cam cover	1 pce.	141266-0-01	
A-44	Set screw SM3.57-40×6 for A-45	2 pcs.	009670-6-12		A-104	Washer for A-105	1 "	116662-0-02	
A-45	Gear separation plate	1 pce.	141269-0-01		A-105	Set screw for A-103	1 "	100644-0-01	
A-46	Oil cap	1 pce.	104450-0-01		A-106	Oil cap	1 "	104450-0-01	
A-47	Oil cap	1 "	104449-0-01		A-107	Handle lever stopper spring	1 "	142739-0-01	
A-48	Set screw for A-49	1 "	105219-0-01		A-108	Stud screw for A-107	1 "	116755-0-01	
A-49	Thread take-up cover	1 "	141268-0-01		A-109	Sub cam cover	1 "	143445-0-01	
A-50	Set screw 4.37 for A-51	1 "	100388-0-01		A-110	Set screw for A-109	3 pcs.	107491-0-02	
A-52	Name plate (70)	1 "	112548-0-01		A-111	Oil gauge window	1 pce.	143713-0-01	
A-53	Set screw for A-52	2 pcs.	100191-0-03		A-112	Set screw for A-113	2 pcs.	009680-6-12	
A-54	Oil cap	1 pce.	142743-0-01		A-113	Cover for K-47	1 pce.	143911-0-01	
A-57	Armbed	1 "	142338-0-01		A-114	Thread retainer	1 "	145961-0-01	
A-58	Oil cap	1 "	104833-0-01						

B



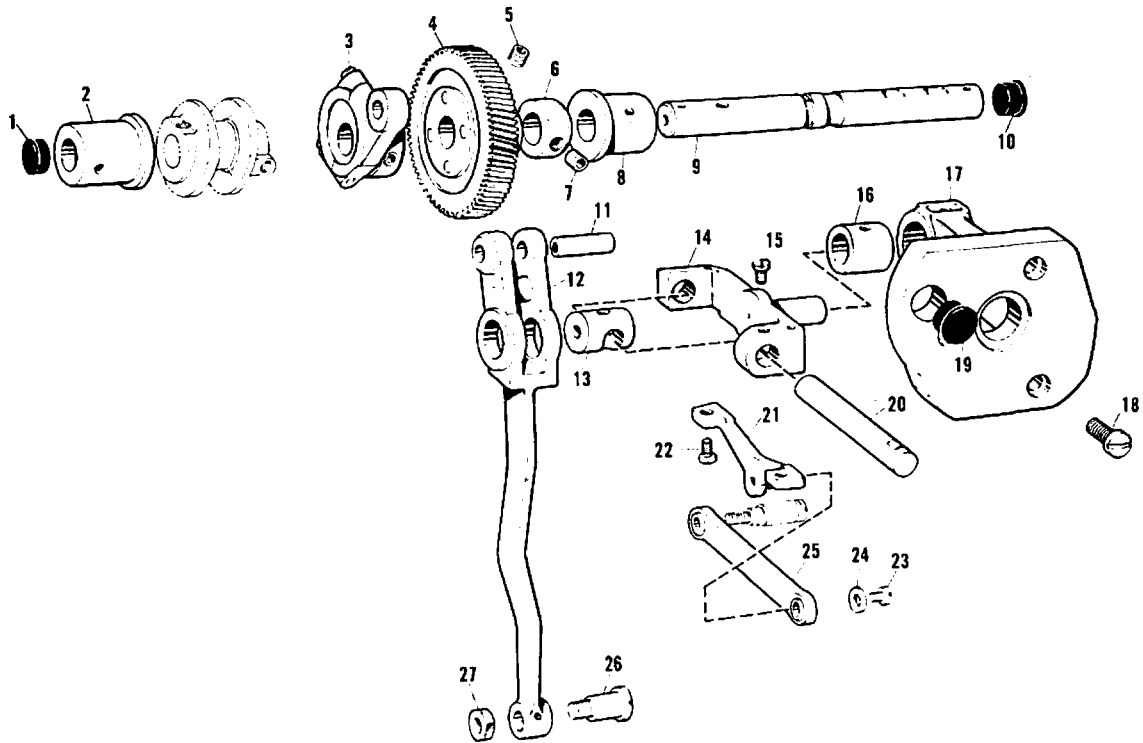
Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.
B-1	Set screw SM6.35-40×6 for B-2	1 pce.	014770-6-22		B-40	Set screw for B-39	3 pcs.	100086-0-03	
B-2	Stud for B-3	1 "	141295-0-01		B-41	Bearing 6202VV	2 "	072620-2-60	
B-3	Needle bar support	1 "	141294-0-01		B-42	Bearing washer	1 pce.	141275-0-01	
B-4	Needle bar	1 "	141293-0-01		B-43	Bearing cap	1 "	141276-0-01	
B-5	Wick holder	1 "	141682-0-01		B-44	Set screw for B-43	3 pcs.	102843-0-04	
B-6	Set screw for B-5	1 "	100130-0-03		B-47	Vertical shaft	1 pce.	141297-0-01	
B-7	Wick 4×4	1 "	141681-0-01		B-48	Vertical shaft upper bushing	1 "	141298-0-00	
B-8	Set screw for B-9	2 pcs.	107093-0-02		B-49	Set screw for B-48	1 "	100016-0-03	
B-9	Needle bar support guide	1 pce.	141296-0-01		B-50	Collar for B-52	1 "	104521-0-01	
B-11	Set screw needle	1 "	117666-0-01		B-51	Set screw for B-50	2 pcs.	101706-0-01	
B-12	Needle DP×5	1 "	107415-0-14		B-52	Vertical shaft lower bushing 1	1 pce.	142709-0-00	
B-10	Set screw for B-13	1 "	140004-0-01		B-53	Set screw for B-52	2 pcs.	100016-0-03	
B-13	Needle bar connecting stud	1 "	111237-0-01		B-54	Vertical lower gear	1 pce.	117874-0-01	
B-14	Needle bar crank rod	1 "	118829-0-01		B-55	Set screw SM3.65-40×6 for B-54	2 pcs.	014770-6-22	181093-0-01
B-15	Cap screw for B-14	1 "	103001-0-01		B-57	Lower shaft gear	1 "	117875-0-01	
B-16	Needle roller	1 "	116735-0-00		B-58	Set screw SM6.35-40×14 for B-57	2 pcs.	014770-6-22	
B-17	Needle bar crank	1 "	141292-0-01	141291-0-01	B-56	Lower shaft bushing (right)	1 pce.	141303-0-00	
B-18	Stud for B-20	1 "	111468-0-01		B-59	Collar (right) for B-61	1 "	118760-0-01	
B-20	Thread take-up lever	1 "			B-60	Set screw for B-59	2 pcs.	101706-0-01	
B-21	Needle roller	1 "	116735-0-00		B-61	Lower shaft bushing (intermediate)	1 pce.	141305-0-00	
B-22	Needle bar crank washer	1 "	110367-0-01		B-62	Set screw SM6.35-40×14 for B-61	1 "	013771-4-10	
B-19	Set screw SM6.35-40×6 for B-18	1 "	014770-6-22		B-63	Collar (left) for B-61	1 "	141304-0-01	
B-23	Set screw	1 "	101706-0-01		B-64	Set screw for B-63	4 pcs.	101706-0-01	
B-24	Set screw SM6.35-40×6 for B-17	2 pcs.	014770-6-22		B-65	Oil adjusting knob	1 pce.	142582-0-01	
B-25	Counter weight	1 pce.	141290-0-00		B-66	Oil adjusting stud	1 "	142408-0-01	
B-26	Set screw SM6.35-40×6 for B-25	1 "	014770-6-22		B-67	Set screw for B-65	2 pcs.	100388-0-04	
B-27	Set screw for B-25	1 "	100250-0-01		B-68	Ratchet for B-72	1 pce.	109862-0-01	
B-28	Upper shaft bushing (left)	1 "	141272-0-00		B-69	Set screw for B-68	2 pcs.	100242-0-01	
B-29	Upper shaft	1 "	141271-0-01		B-70	Collar for B-72	1 pce.	109183-0-01	
B-30	Worm	1 "	141367-0-01		B-71	Set screw for B-70	2 pcs.	109184-0-01	
B-31	Set screw SM6.35-40×6 for B-30	2 pcs.	014770-0-00		B-72	Oil adjusting ring	1 pce.	142407-0-01	
B-32	Upper shaft bushing (intermediate)	1 pce.	141273-0-00		B-73	Lower shaft bushing (left)	1 "	109857-0-01	
B-33	Set screw SM6.35-40×6 for B-34	2 pcs.	014770-6-22		B-74	Collar for B-80	1 "	141306-0-01	
B-34	Speed reduction gear	1 pce.	141309-0-01		B-75	Set screw for B-74	4 pcs.	143793-0-01	
B-35	Set screw SM6.35-40×6 for B-36	2 pcs.	014770-6-22		B-76	Lower shaft	1 pce.		143933-0-01
B-36	Upper shaft gear	1 pce.	116774-0-01	181092-0-01	B-77	Felt 2.8×30	1 "	106436-0-01	
B-45	Vertical shaft upper gear	1 pce.	116999-0-01		B-78	Oil cap for B-76	1 "	109173-0-01	
B-46	Set screw SM6.35-40×6 for B-45	2 pcs.	014770-6-22		B-79	Felt 2.8×30	1 "	106436-0-01	
B-37	Stop ring Oil rejector	1 "	048150-1-40		B-80	Rotary hook assembly	1 "	143986-0-01	
B-38	Oil rejector	1 "	141277-0-00		B-81	Bobbin	1 "	117480-0-01	
B-39	Bearing case	1 "	141274-0-00		B-82	Bobbin case assembly	1 "	107097-0-01	

※ If you need of  mark, please advise assembly number.



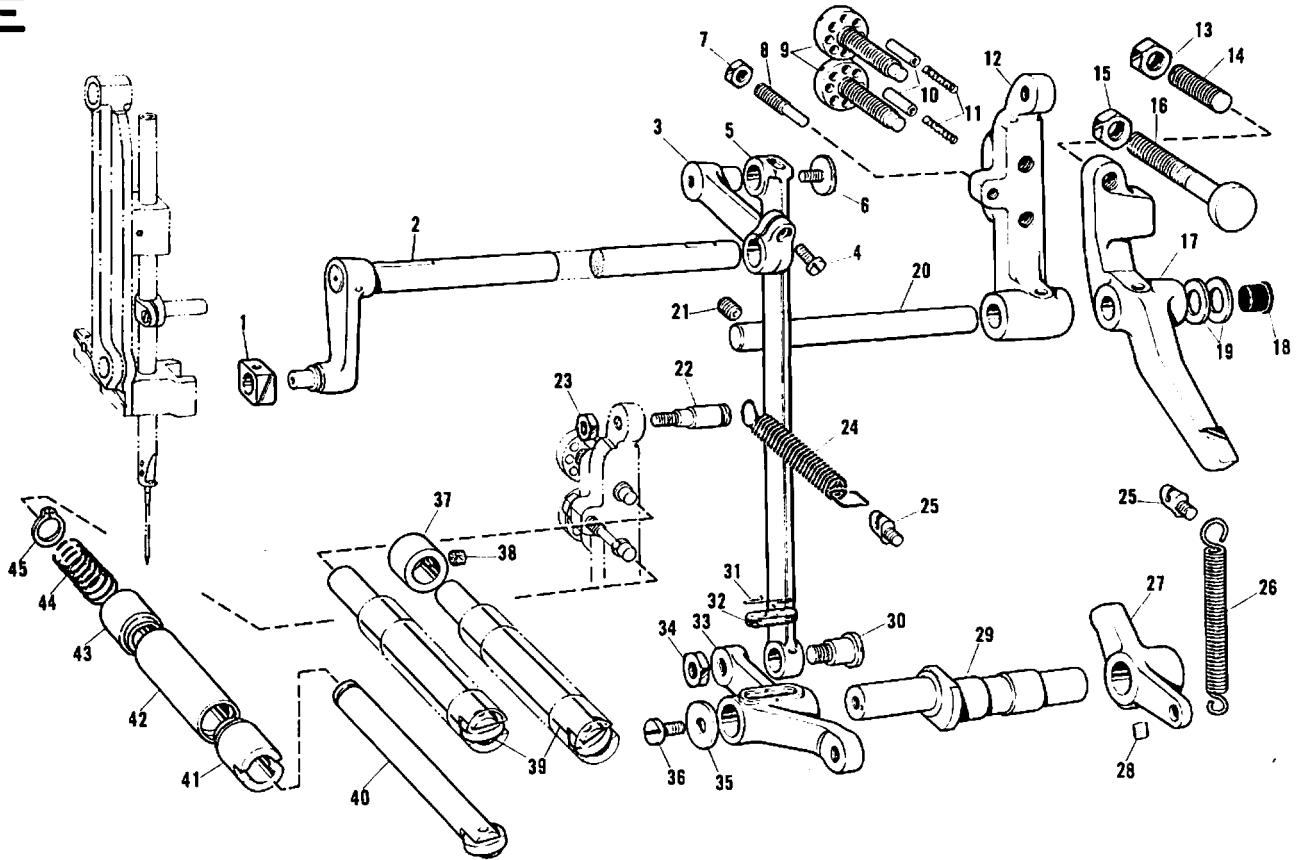
Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
C-1	Set screw for C-3	4 pcs.	102843-0-04		C-48	Clutch lever shaft	1 pce.	141558-0-01	
C-2	Stop ring	1 pce.	048150-1-40		C-49	Stopper bar	1 "	141554-0-01	
C-3	Bearing cap (large)	1 "	141279-0-01		C-50	Stopper bar clamp	1 "	115552-0-01	
C-4	Bearing 6005 VV	1 "	072600-5-60		C-51	Stopper spring felt	1 "	115550-0-01	
C-5	Idle pulley	1 "	141278-0-01		C-52	Washer for C-53	1 "	025100-1-32	
C-6	Pulley	1 "	141280-0-01		C-53	Stopper spring (B)	1 "	115551-0-01	
C-7	Stopper screw for C-14	1 "	141282-0-01		C-54	Clutch stopper stud	1 "	115542-0-01	
C-8	Set screw for C-7	1 "	109184-0-01		C-55	Stud screw for C-54	1 "	115544-0-01	
C-9	Set screw SM6.35-40×6 for C-6	1 "	014770-6-22		C-56	Clutch stopper	1 "	115545-0-01	
C-10	Taper pin 4×36	1 "	142297-0-01		C-57	Spring washer for C-58	1 "	028050-2-40	
C-11	Plunge spring	1 "	141283-0-01		C-58	Nut SM4.76-32 for C-59	2 pcs.	021710-2-03	
C-12	Block for pulley stop cam	1 "	141285-0-01		C-59	Stud screw for C-56	1 pce.	115546-0-01	
C-13	Plunge spring supporter	1 "	141284-0-00		C-60	Set bolt M8×25 for C-62	3 pcs.	018082-5-22	
C-14	Block for pulley	1 "	141281-0-01		C-61	Set screw SM6.35-40×6 for C-48	1 pce.	014770-6-22	
C-15	Pulley inside cover	1 "	142751-0-01		C-62	Clutch lever bracket	1 "	141557-0-01	
C-16	Stop cam assembly	1 "	141286-0-01		C-63	Bushing for B-68	1 "	142372-0-00	
C-17	Cap for stop cam	1 "	141289-0-01		C-64	Bushing 13×7 for B-68	1 "	142375-0-00	
C-18	Set screw for C-17	3 pcs.	117348-0-01		C-65	Sustainer for C-68	2 pcs.	141550-0-01	
C-19	Set screw SM5.95-28×10	2 "	009761-0-12		C-66	Stop lever spring	1 pce.	141549-0-01	
C-20	Belt shifter	1 pce.	141556-0-01		C-67	Clutch claw (A)	1 "	141548-0-01	
C-21	Spring hook	1 "	141334-0-01		C-68	Stop lever	1 "	141546-0-01	
C-22	Clutch return spring	1 "	141559-0-01		C-69	Washer for C-70	1 "	118735-0-02	
C-23	Stud screw for C-22	1 "	115559-0-02		C-70	Set bolt SM6.35-28×14 for C-68	1 "	017781-4-12	
C-24	Adjusting plate for C-22	1 "	115558-0-02		C-71	Set screw for C-73	2 "	025680-2-34	
C-25	Set screw SM5.95-28×10 for C-24	1 "	009761-0-12		C-73	Retainer for C-74	1 pce.	141703-0-01	
C-26	Set screw SM5.95-28×12 for C-54	1 "	009761-2-13		C-74	Emergency stop supporter	1 "	141700-0-01	
C-27	Washer for C-26	1 "	025060-3-33		C-75	Emergency stop lever shaft	1 "	141618-0-01	
C-29	Washer for C-30	1 "	025100-1-32		C-76	Washer for C-77	1 "	141701-0-01	
C-30	Stop ring	1 "	048100-1-42		C-77	Stud screw for C-75	1 "	141702-0-01	
C-31	Brake lever assembly	1 "	142755-0-01		C-78	Set screw for C-79	2 pcs.	107407-0-02	
C-35	Washer for C-36	1 "	107153-0-01		C-79	Emergency stop lever	1 pce.	141698-0-01	
C-36	Stop ring	1 "	048070-3-42		C-80	Spring for C-79	1 "	141699-0-01	
C-39	Brake spring	1 "	142771-0-01		C-81	Stop ring	1 "	048010-3-42	
C-40	Spring hook	1 "	141334-0-01		C-82	Belt shifter bar	1 "	141574-0-01	
C-41	Clutch lever pin	1 "	141555-0-01		C-83	Set bolt SM5.95-28×14 for C-84	1 "	017761-4-12	
C-42	Emergency stop joint	1 "	141704-0-01		C-84	Stop cam segment (B)	1 "	141547-0-01	
C-43	Clutch claw (B)	1 "	141553-0-01		C-85	Nut 9.52 for C-49	1 "	100075-0-03	
C-44	Washer for C-45	1 "	118735-0-02		C-86	Clutch lever	1 "	146041-0-01	
C-45	Set bolt SM6.35-28×25 for C-43	1 "	017782-5-12		C-87	Brake lever pin	1 "	142214-0-01	
C-46	Stopper spring (A)	1 "	115548-0-01		C-88	Set screw	1 "	100013-0-01	
C-47	Nut SM9.52-28 for C-49	1 "	021860-2-03		C-89	Stud screw	1 "	141953-0-01	

D

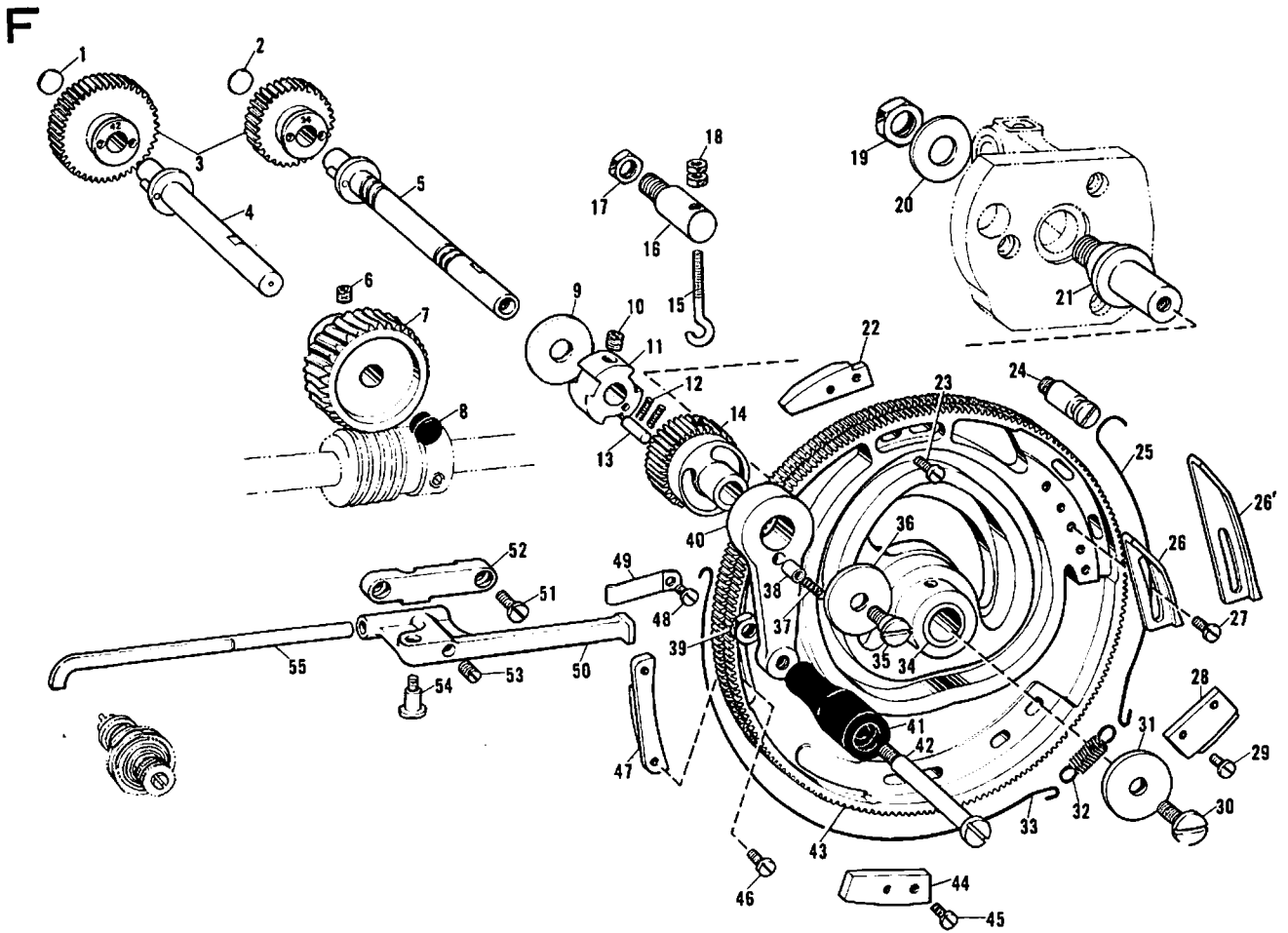


Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.
D-1	Oil cap	1 pce.	104449-0-01		D-15	Set screw for D-20	1 pce.	104908-0-01	
D-2	Sub shaft bushing (left)	1 *	141311-0-00		D-16	Bushing for D-17	1 *	141404-0-00	
D-3	Zigzag cam	1 *	141317-0-01		D-17	Feed cam shaft bracket	1 *	141402-0-01	
D-4	Sub shaft gear	1 *	141313-0-01		D-18	Set screw for D-17	3 pcs.	112657-0-03	
D-5	Set screw SM6.35-40×6 for D-4	2 pcs.	014770-6-22		D-19	Oil cap	1 pce.	104821-0-01	
D-6	Collar for D-4	1 pce.	101486-0-01		D-20	Zigzag adjusting shaft	1 *	141322-0-01	
D-7	Set screw for D-6	2 pcs.	100013-0-03		D-21	Zigzag adjusting link shaft	1 *	141328-0-01	
D-8	Sub shaft bushing (right)	1 pce.	141312-0-00		D-22	Set screw for D-21	2 pcs.	100541-0-01	
D-9	Sub shaft	1 *	141310-0-01		D-23	Set screw SM3.57-40×6	1 pce.	009670-6-12	
D-10	Oil cap	1 *	104449-0-01		D-24	Washer for D-23	1 *	102707-0-02	
D-11	Pin for D-12	1 *	141325-0-01		D-25	Zigzag adjusting link	1 *	141329-0-01	
D-12	Zigzag adjusting ring connector	1 *	141324-0-01		D-26	Stud screw D-12	1 *	141344-0-01	
D-13	Zigzag adjusting ring	1 *	141323-0-00		D-27	Nut for D-26	1 *	403388-0-01	
D-14	Zigzag adjusting bracket	1 *	141321-0-01						

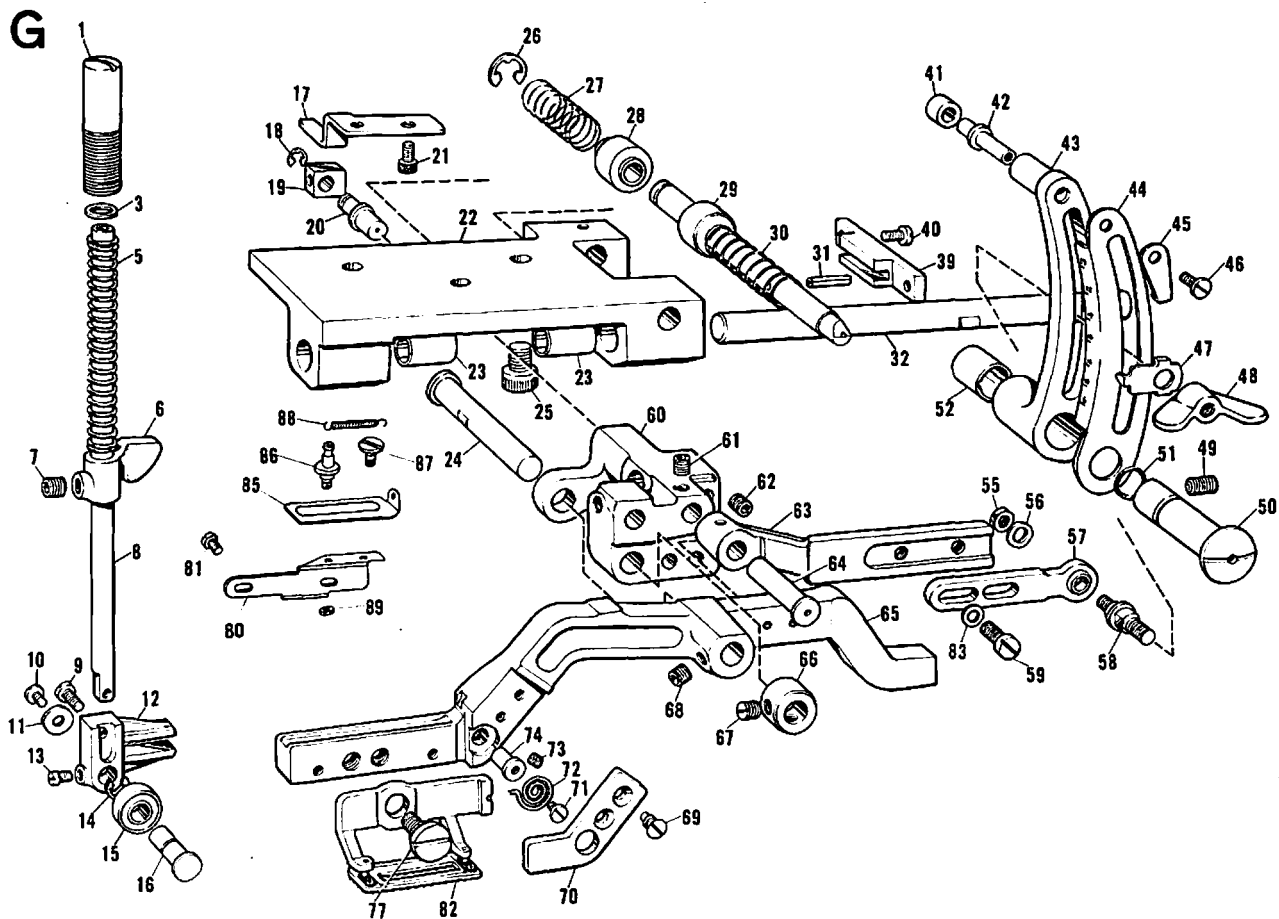
E



Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
E-1	Slide block for E-2	1 pce.	141353-0-01		E-24	Spring for E-12	1 pce.	141333-0-01	
E-2	Zigzag connecting lever (B)	1 "	141348-0-01		E-25	Spring hook	1 "	141334-0-01	
E-3	Zigzag connecting lever (A)	1 "	141347-0-01		E-26	Spring for E-27	1 "	141358-0-01	
E-4	Set screw SM4.76-32×14 for E-3	1 "	009711-4-13		E-27	Stopper for E-17	1 "	141357-0-00	
E-5	Zigzag connecting rod	1 "	141346-0-01		E-28	Set screw SM5.95-28×6 for E-27	2 pcs.	014760-6-22	
E-6	Cap screw for E-5	1 "	100511-0-03		E-29	Zigzag eccentric shaft	1 pce.	141341-0-01	
E-7	Nut for E-8	1 "	106588-0-01		E-30	Stud screw for E-5	1 "	141345-0-01	
E-8	Stopper screw for E-12	1 "	141339-0-01		E-31	Chip	1 "	116795-0-00	
E-9	Zigzag adjusting screw	2 pcs.	141336-0-01		E-32	Felt	1 "	117598-0-01	
E-10	Zigzag adjusting screw stopper pin	2 "	141337-0-01		E-33	Zigzag eccentric shaft link	1 "	141342-0-00	
E-11	Spring for E-10	2 "	141338-0-01		E-34	Nut for E-30	2 pcs.	403388-0-01	
E-12	Zigzag adjusting lever	1 pce.	141335-0-00		E-35	Washer for E-36	1 pce.	141343-0-02	
E-13	Nut for E-14	1 "	105812-0-01		E-36	Set screw for E-29	1 "	112857-0-03	
E-14	Left zigzag adjusting screw	1 "	141355-0-01		E-37	Collar for E-39	1 "	141351-0-01	
E-15	Nut for E-16	1 "	105812-0-02		E-38	Set screw SM6.35-40×6 for E-37	1 "	014770-6-22	
E-16	Right zigzag adjusting screw	1 "	141356-0-01		E-39	Zigzag connecting shaft	2 pcs.	141359-0-01	
E-17	Zigzag position changing lever	1 "	141354-0-00		E-40	Bar tack connecting shaft	1 pce.	141659-0-01	
E-18	Oil cap	1 "	104450-0-01		E-41	Bushing (right) for E-39 & E-40	3 pcs.	141716-0-00	
E-19	Washer for E-19	2 pcs.	110494-0-01		E-42	Collar for E-39 & E-40	3 "	141366-0-01	
E-20	Zigzag adjusting lever shaft	1 pce.	141340-0-01		E-43	Bushing (left) for E-39 & E-40	3 "	141365-0-00	
E-21	Set screw SM5.95-28×6 for E-20	1 "	013760-6-12		E-44	Spring for E-40	1 pce.	141363-0-01	
E-22	Zigzag adjusting lever screw pin	1 "	141332-0-01		E-45	Stop ring	1 "	048110-1-43	
E-23	Nut for E-22	1 "	106588-0-01						

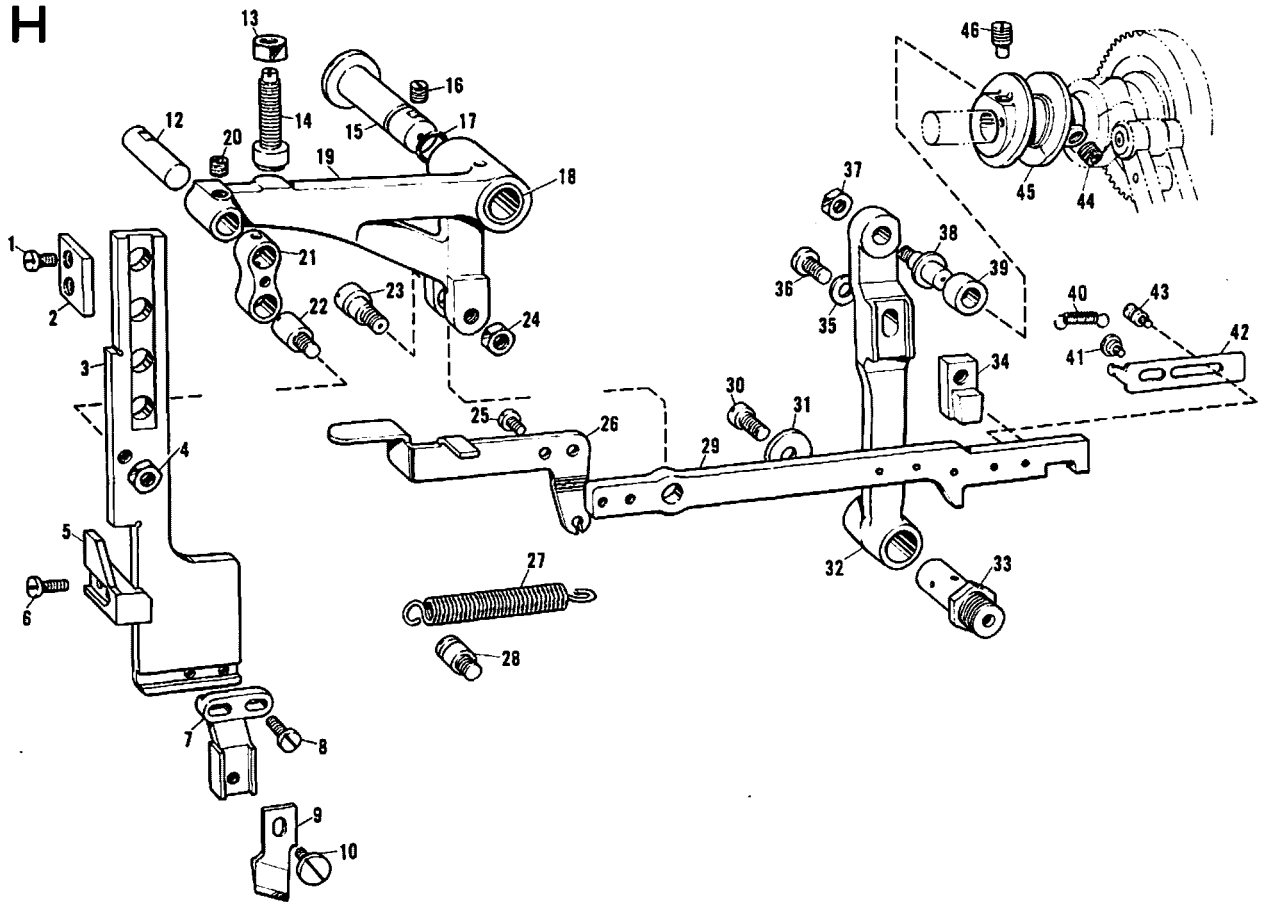


Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
F-1	Gear indicator R	1 pce.	142272-0-01		F-22	Thread tension release segment B	1 pce.	143944-0-01	
F-2	Gear indicator L	1	142273-0-01		F-23	Set screw SM4.37-40 x 14 for F-22	2 pcs.	009681-2-12	
F-3	Gear 22	1	141372-0-01		F-24	Hook for F-25	1 pce.	141413-0-01	
	" 24		141373-0-01		F-25	Cam brake wire B	1	141410-0-01	
	" 26 (-3)		141374-0-00		F-26	Stop cam segment (small)	1	142734-0-01	
	" 28		141375-0-00		F-26	Stop cam segment (middle)	1	141446-0-01	
	" 30		141376-0-00		F-26	Stop cam segment (large)	1	141447-0-01	
	" 32		141377-0-00		F-27	Set screw SM4.37-40 x 10 for F-26	2 pcs.	009681-0-12	
	" 34 (-1, -2)		141378-0-00		F-28	Cutter segment	1 pce.	141448-0-01	
	" 36		141379-0-00		F-29	Set screw for F-28	2 pcs.	107407-0-03	
	" 38		141380-0-00		F-30	Set screw for F-42	1 pce.	141408-0-01	
	" 40		141381-0-00		F-31	Washer for F-30	1	141400-0-01	
	" 42 (-1, -2)		141382-0-00		F-32	Spring for F-25 & F-33	1	141411-0-01	
	" 44		141383-0-00		F-33	Cam brake wire A	1	141409-0-01	
	" 46		141384-0-00		F-34	Feed cam bushing Stud screw for F-40	1	142375-0-00	
	" 48		141385-0-00		F-35	Stud screw for F-40	1	142702-0-01	
	" 50 (-3)		141386-0-00		F-36	Washer for F-35	1	141400-0-01	
	" 52		141387-0-00		F-37	Spring for F-38	1	141397-0-01	
	" 54		141388-0-00		F-38	Roller pin for F-40	1	141396-0-01	
F-4	Worm wheel shaft	1 pce.	141369-0-01		F-39	Nut for SM6.35-28 for F-40	1	021780-3-03	
F-5	Gear shaft	1	141714-0-01		F-40	Handle lever	1	141395-0-01	
F-6	Set screw SM 6.35-40 x 6 for F-7	2 pcs.	014770-6-22		F-41	Handle	1	141398-0-01	
F-7	Worm wheel	1 pce.	141368-0-00		F-42	Handle shaft	1	141399-0-01	
F-8	Oil cap	1	104821-0-01		F-43	Feed cam assembly	1	143942-0-01	
F-9	Washer for F-11	1	141394-0-01		F-44	Thread tension release segment A	1	143943-0-01	
F-10	Set screw SM5.95-28 x 6 for F-11	2 pcs.	014760-6-22		F-45	Set screw for F-44	2 pcs.	107407-0-03	
F-11	Free wheel cam	1 pce.	141391-0-01		F-46	Set screw SM4.37-40 x 12 for F-47	4	009681-2-12	
F-12	Spring for F-11	6 pcs.	141392-0-01	141389-0-01	F-47	Bar tack segment	2	141445-0-01	
F-13	Pin for F-11	3	141393-0-01		F-48	Set screw SM3.18 for F-49	1 pce.	100242-0-03	
F-14	Free wheel gear	1 pce.	141390-0-01		F-49	Spring plate for F-50	1	142258-0-01	
F-15	Adjusting hook for F-33	1	140947-0-01		F-50	Thread release lever	1	141596-0-01	
F-16	Cam brake hook bracket	1	141412-0-01		F-51	Set screw SM4.37-40 x 10 for F-52	2 pcs.	009681-0-14	
F-17	Nut for F-16	1	106147-0-01		F-52	Thread release lever bracket	1 pce.	141599-0-01	
F-18	Nut for F-15	2 pcs.	021400-1-03		F-53	Set screw SM5.95-28 x 8 for F-55	1	013760-8-12	
F-19	Nut for F-21	1 pce.	021910-3-02		F-54	Stud screw for F-50	1	141598-0-01	
F-20	Washer for F-19	1	025900-2-32		F-55	Thread release pin	1	141597-0-01	
F-21	Feed cam shaft	1	141403-0-01						

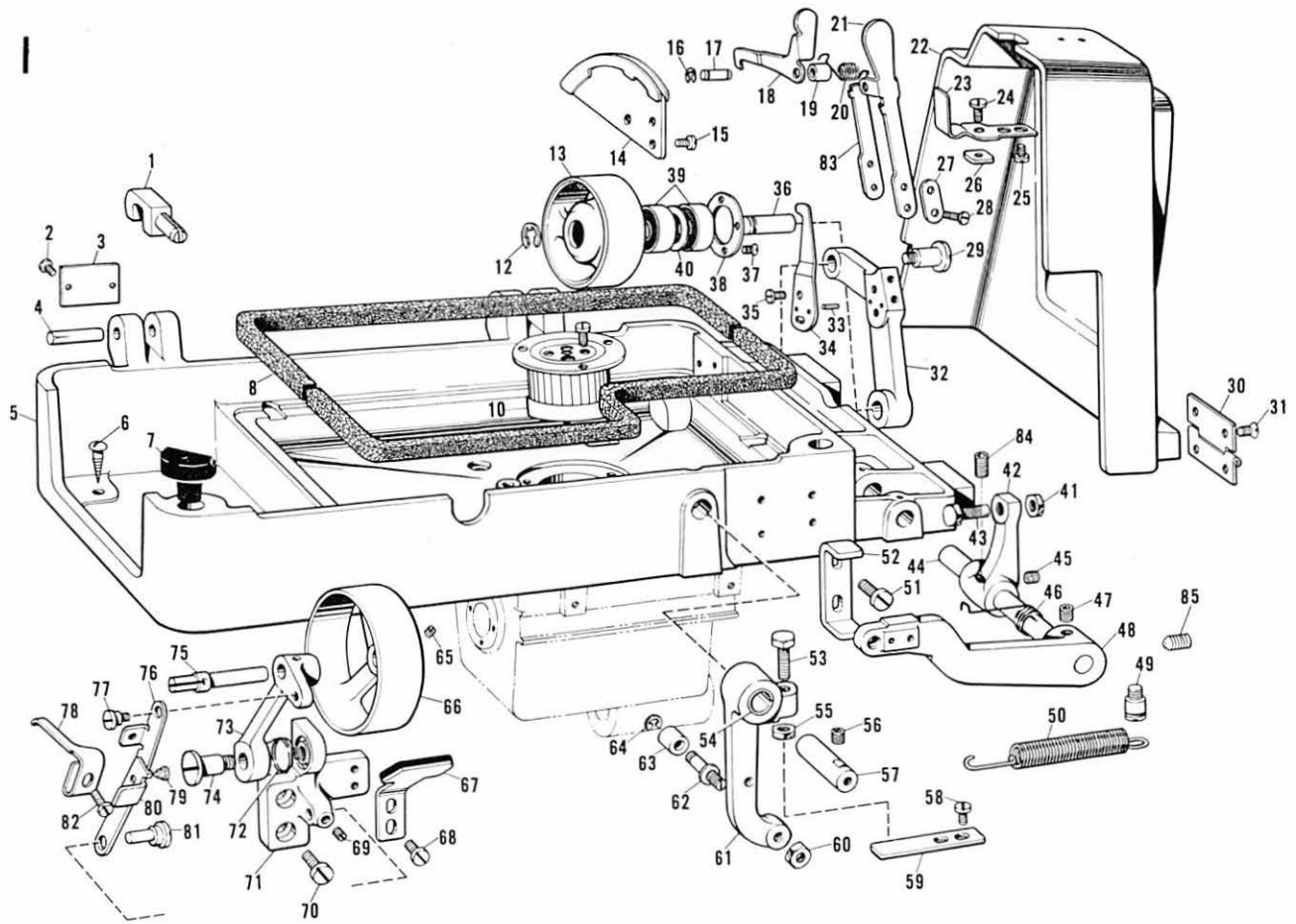


Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.
G-1	Pressure adjusting screw	1 pce.	141454-0-01		G-46	Set screw for G-44	1 pce.	112751-0-01	
G-3	Washer for G-1	1 *	100281-0-01		G-47	Length feed indicator	1 *	141419-0-01	
G-5	Presser bar spring (large)	1 *	141451-0-01		G-48	Wing nut	1 *	118262-0-01	
G-6	Presser bar bracket	1 *	141450-0-01		G-49	Set screw for G-50	1 *	100062-0-03	
G-7	Set screw SM6.35-40x6 for G-6	1 *	014770-6-22		G-50	Length feed adjusting lever shaft	1 *	141417-0-01	
G-8	Presser bar	1 *	141449-0-01		G-51	Packing for G-50	1 *	141697-0-00	
G-9	Set screw SM4.37-40x10 for G-12	1 *	009681-0-12		G-52	Bushing for G-50	2 pcs.	142372-0-00	
G-10	Set screw for G-12	1 *	100366-0-02		G-55	Nut for G-58	1 pce.	110140-0-01	
G-11	Washer for G-10	1 *	025350-3-32		G-56	Washer for G-57	1 *	107175-0-02	
G-12	Presser bar roller bracket	1 *	141456-0-01		G-57	Feed lever B	1 *	141422-0-01	
G-13	Set screw for G-16	1 *	107491-0-03	141455-0-01	G-58	Feed lever joint	1 *	141424-0-01	
G-14	Stop ring	1 *	048060-3-42		G-59	Set screw SM5.95-28x10 for G-57	2 pcs.	009761-0-14	
G-15	Roller 697 ZZ	1 *	072069-7-80		G-60	Feed arm bracket	1 pce.	141430-0-01	
G-16	Roller stud	1 *	141458-0-01		G-61	Set screw SM5.95-20x6 for G-63	1 *	014760-6-22	
G-17	Stopper plate for J-17	1 *	141507-0-01		G-62	Set screw SM6.35-40x6 for G-32	1 *	014770-6-22	
G-18	Stop ring	1 *	048040-3-42		G-63	Feed lever A	1 *	141421-0-01	
G-19	Feed bar guide block	1 *	118215-0-01		G-64	Stud for G-63	1 *	141426-0-01	
G-20	Stud for G-60	1 *	141431-0-01		G-65	Length feed arm	1 *	141433-0-01	
G-21	Set bolt M4x8 for G-17	2 pcs.	018400-8-22		G-66	Set collar for G-24	1 *	110495-0-03	
G-22	Feed guide shaft bracket	1 pce.	141427-0-01		G-67	Set screw for G-66	2 pcs.	101706-0-03	
G-23	Bushing for G-22	2 pcs.	142374-0-00		G-68	Set screw SM6.3-40x6 for G-24	1 pce.	014770-6-22	
G-24	Feed arm shaft	1 pce.	141434-0-01		G-69	Set screw for G-70	2 pcs.	100032-0-03	
G-25	Set bolt M8x14 for G-22	3 pcs.	018081-4-22		G-70	Guide plate for G-75	1 pce.	141440-0-01	
G-26	Stop ring	1 pce.	048080-3-42		G-71	Set screw for G-72	1 *	115761-0-01	
G-27	Cutter clutch spring (H)	1 *	141488-0-01		G-72	Upper clamping foot spring	1 *	141442-0-01	
G-28	Cutter clutch	1 *	141487-0-01		G-73	Set screw for G-74	1 *	100218-0-02	
G-29	Cutter clutch bar	1 *	141484-0-01		G-74	Stud for G-72	1 *	141441-0-01	
G-30	Cutter clutch spring (A)	1 *	141485-0-01		G-77	Stud screw for G-75	1 *	141439-0-01	
G-31	Pin for G-29	1 *	047301-8-42		G-81	Set screw SM4.37-40x7	2 pcs.	009680-7-12	
G-32	Feed guide shaft	1 *	141429-0-01		G-82	Upper clamping foot	1 pce.	144493-0-01	
G-39	Cutter clutch bar guide	1 *	141486-0-01		G-83	Washer for G-59	2 pcs.	118735-0-02	
G-40	Set screw for G-39	2 pcs.	100137-0-02		G-80	Thread scissor guide	1 pce.	141515-0-01	
G-41	Roller	1 pce.	107550-0-02		G-85	Thread scissor guide plate	1 *	146000-0-01	
G-42	Roller stud	1 *	141420-0-01		G-86	Thread screw 3.18	1 *	146002-0-01	
G-43	Length feed adjusting lever	1 *	141414-0-01		G-87	Stud screw	1 *	146001-0-01	145999-0-01
G-44	Length feed indicator plate	1 *	141418-0-01		G-88	Spring	1 *	118352-0-01	
G-45	Stopper for G-47	1 *	142723-0-01		G-89	Nut	2 *	021660-1-02	

H

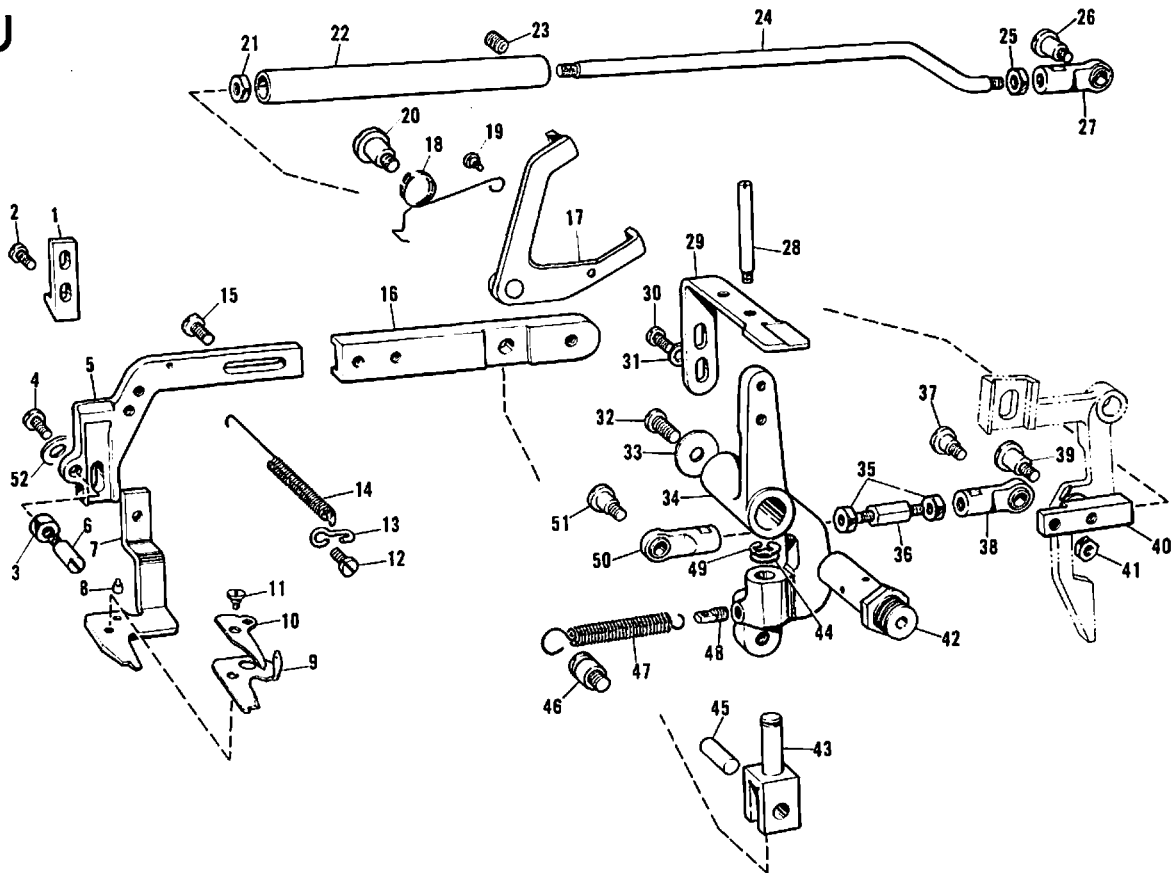


Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.
H-1	Set screw SM4.37-40×7 for H-2	2 pcs.	009680-7-12		H-22	Stud screw for H-3	1 pce.	141476-0-01	
H-2	Cutter base guide (upper)	1 pce.	141478-0-01		H-23	Stud screw for H-18	1 "	141469-0-01	
H-3	Cutter base	1 "	141477-0-01		H-24	Nut for H-23	1 "	110744-0-02	
H-4	Nut for H-22	1 "	107114-0-01		H-25	Set screw SM4.37-40×8 for H-26	2 pcs.	009680-0-14	
H-5	Cutter base guide (lower)	1 "	141479-0-01		H-26	Cutter stop lever	1 pce.	141468-0-01	
H-6	Set screw SM4.37-40×14	2 pcs.	009681-4-12		H-27	Cutter lever spring	1 "	141471-0-01	
H-7	Cutter holder	1 pce.	141480-0-01		H-28	Spring hook	1 "	141472-0-01	
H-8	Set screw for H-7	2 pcs.	107407-0-02		H-29	Cutter lever	1 "	141467-0-01	
H-9	Cutter 3/4"	1 pce.	107204-0-01		H-30	Set screw for H-32	1 "	112657-0-03	
	" 1/2"	1 "	107200-0-01		H-31	Washer for H-33	1 "	141343-0-02	
	" 3/8"	1 "	107205-0-01		H-32	Cutter connecting lever	1 "	141462-0-01	
	" 3/8"	1 "	109837-0-01		H-33	Stud for cutter connecting lever	1 "	141463-0-01	
	" 3/4"	1 "	107207-0-01		H-34	Cutter connecting slide block	1 "	141466-0-01	
	" 3/4"	1 "	109838-0-01		H-35	Washer for H-36	1 "	118735-0-02	
H-10	Set screw for H-9	1 "	115503-0-01		H-36	Set screw SM6.35-40×18 for H-34	1 "	006771-8-12	
H-12	Stud for H-19	1 "	141474-0-01		H-37	Nut for H-38	1 "	106588-0-01	
H-13	Nut for SM9.52-18 for H-14	1 "	022870-1-04		H-38	Stud for H-32	1 "	141465-0-01	
H-14	Cutter base lifter stopper	1 "	141482-0-01		H-39	Roller for H-38	1 "	141464-0-01	
H-15	Cutter base lifter shaft	1 "	141417-0-01		H-40	Spring for H-29	1 "	120790-0-01	
H-16	Set screw for H-15	1 "	110032-0-02		H-41	Stud screw for H-42	2 pcs.	112144-0-01	
H-17	Packing for H-15	1 "	141697-0-00		H-42	Clutch for H-34	1 pce.	142779-0-01	
H-18	Lever for H-19	1 "	142376-0-00		H-43	Spring hook for H-40	1 "	107126-0-01	
H-19	Cutter base lifter	1 "	141473-0-01		H-44	Set screw for SM6.35-40×6	1 "	014770-6-22	
H-20	Set screw SM6.35-40×6 for H-12	1 "	014770-6-22		H-45	Cutter cam	1 "	141461-0-01	
H-21	Cutter base connecting link	1 "	141475-0-01		H-46	Stopper screw for H-45	1 "	141717-0-01	



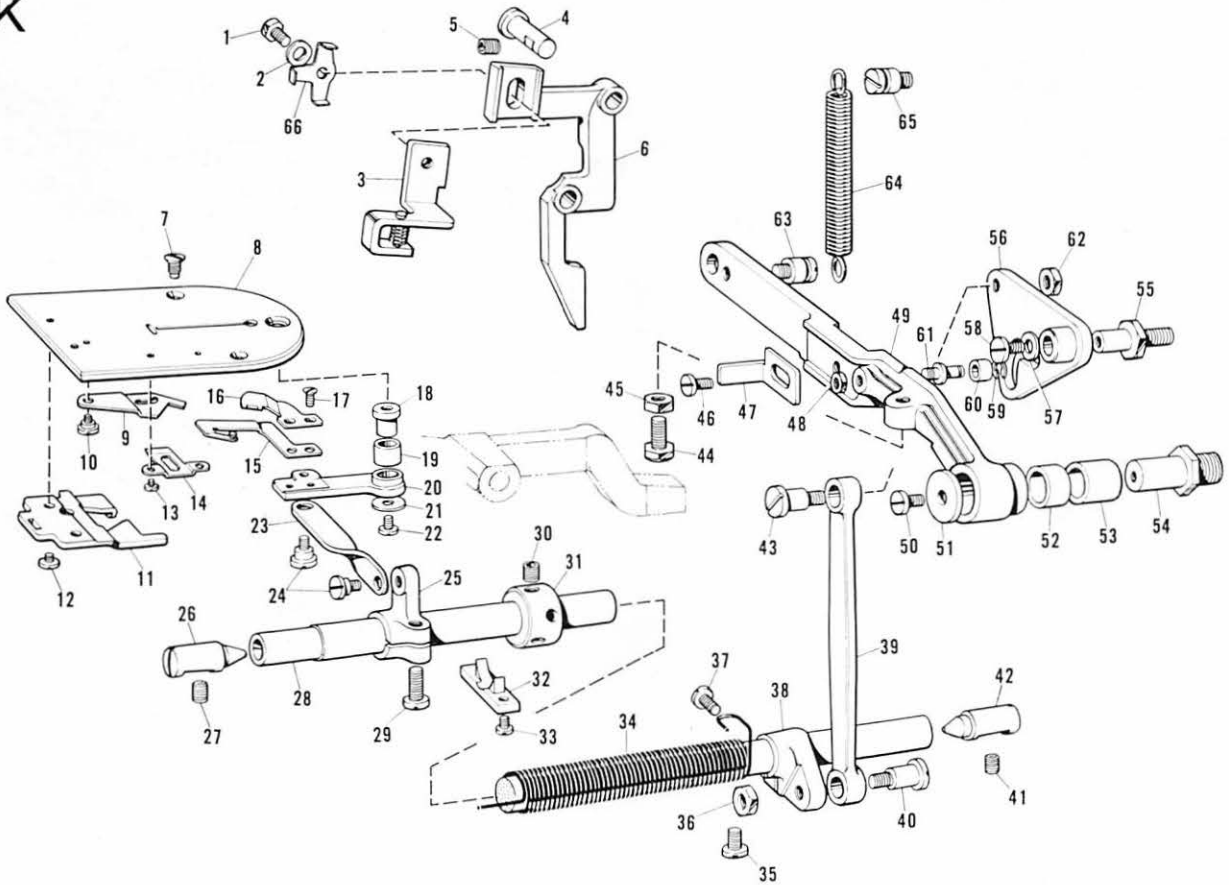
Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
I-1	Head hook	2 pcs.	141256-0-01		I-44	Clutch starting lever shaft	1 pce.	141561-0-01	
I-2	Set screw SM4.37-40×7 for I-3	4 "	009680-7-12		I-45	Set screw SM6.35-40 for I-42	1 "	108748-0-01	
I-3	Head hook plate	2 "	142312-0-01		I-46	Clutch starting lever spring	1 "	141562-0-01	
I-4	Spring pin	2 "	141257-0-01		I-47	Set screw SM6.35-40×6 for I-48	1 pcs.	014770-6-22	
I-5	Head base	1 pce.	141259-0-01		I-48	Clutch starting lift lever	1 "	141563-0-01	
I-6	Set screw for I-5	4 pcs.	101125-0-00		I-49	Spring hook	1 "	141472-0-01	
I-7	Head cushion	2 "	141258-0-01		I-50	Spring for I-61	1 "	141581-0-01	
I-8	Head base packing	1 pce.	114747-0-01		I-51	Set screw SM5.95-28×12	2 pcs.	009761-2-14	
I-10	Oil filter assembly	1 "	146209-0-01		I-52	Stopper for I-48	1 pce.	141564-0-01	
I-11	Set screw SM4.37-40×7 for I-9	3 pcs.	009680-7-12		I-53	Stopper bolt I-61	1 "	115585-0-01	
I-12	Stop ring	1 pce.	048090-3-42		I-54	Bushing for I-61	1 "	142373-0-00	
I-13	Tension pulley	1 "	141622-0-01		I-55	Nut SM7.94-18 for I-53	1 "	022840-3-03	
I-14	Tension pulley ratchet	1 "	141633-0-01		I-56	Set screw SM6.35-40×6 for I-57	1 "	014770-6-22	
I-15	Set screw SM4.37-40×8 for I-14	3 pcs.	009680-8-12		I-57	Belt shift lever pin	1 "	141579-0-01	
I-16	Stop ring	2 "	048030-3-42		I-58	Set screw SM4.37-40×8 for I-59	2 pcs.	009680-8-12	
I-17	Stud for I-18	1 pce.	141629-0-01		I-59	Stopper plate for I-61	1 pce.	141580-0-01	
I-18	Tension pulley pawl	1 "	141628-0-01		I-60	Nut for I-62	1 "	021750-1-03	
I-19	Collar for I-17	1 "	141631-0-01		I-61	Belt shift lever	1 "	141575-0-01	
I-20	Spring for I-18	1 "	141630-0-01		I-62	Roller stud	1 "	141578-0-01	
I-21	Tension pulley lever	1 "	143917-0-01		I-63	Roller for I-62	1 "	141577-0-01	
I-22	Belt cover	1 "	141245-0-01		I-64	Stop ring	1 "	048070-3-42	
I-23	Belt cover spring plate	1 "	141246-0-01		I-65	Set screw for I-66	1 "	100218-0-03	
I-24	Set screw SM4.37-40×45 for I-23	1 "	009689-4-12		I-66	Bobbin winder wheel	1 "	141609-0-01	
I-25	Set screw SM4.37-40×45 for I-23	2 pcs.	009689-4-12		I-67	Bobbin winder brake	1 "	141611-0-01	
I-26	Nut for I-24	1 pce.	105234-0-03		I-68	Set screw SM4.37-40×7 for I-71	2 pcs.	009680-7-02	
I-27	Washer for I-21	1 "	141627-0-01		I-69	Set screw for I-81	1 pce.	104649-0-01	
I-28	Set screw for I-21	2 pcs.	105205-0-01		I-70	Set screw SM6.95-28×12 for I-71	2 "	009761-2-14	
I-29	Stud screw for I-32	1 pce.	141632-0-01		I-71	Bobbin winder bracket	1 "	141602-0-01	
I-30	Belt cover hinge	2 pcs.	107372-0-01		I-72	Spring for I-73	1 "	142259-0-01	
I-31	Set screw for I-30	8 "	107231-0-01		I-73	Bobbin winder arm	1 "	141603-0-01	
I-32	Tension pulley arm	1 pce.	141624-0-01		I-74	Stud screw for I-73	1 "	141604-0-01	
I-33	Belt cover stopper pin	1 "	141247-0-01		I-75	Bobbin winder shaft	1 "	141610-0-01	
I-34	Tension pulley indicator	1 "	141625-0-01		I-76	Bobbin winder link (B)	1 "	141607-0-01	
I-35	Set screw for I-34	2 pcs.	100257-0-10		I-77	Stud screw for I-76	1 "	100659-0-01	
I-36	Tension pulley shaft	1 pce.	141623-0-01		I-78	Bobbin holder	1 "	141608-0-01	
I-37	Set screw for I-38	3 pcs.	110185-0-02		I-79	Pin for I-76 & I-80	1 "	100661-0-01	
I-38	Cap plate for I-39	1 pce.	141316-0-01		I-80	Bobbin winder link (A)	1 "	141606-0-01	
I-39	Bearing 6000DD	2 pcs.	072600-0-40		I-81	Stud for I-80	1 "	141605-0-01	
I-40	Washer for I-39	1 pce.	142342-0-00		I-82	Set screw for I-78	1 "	507142-0-02	
I-41	Nut SM7.94-18 for I-43	1 "	022840-3-03		I-83	Tension pulley lever plate	1 "	143914-0-01	
I-42	Clutch starting lever	1 "	141560-0-01		I-84	Set screw SM6.35-40×6 for I-42	1 "	014770-6-22	
I-43	Stopper bolt for I-42	1 "	115585-0-01		I-85	Set screw SM6.35-40 for I-48	1 "	108748-0-01	

J

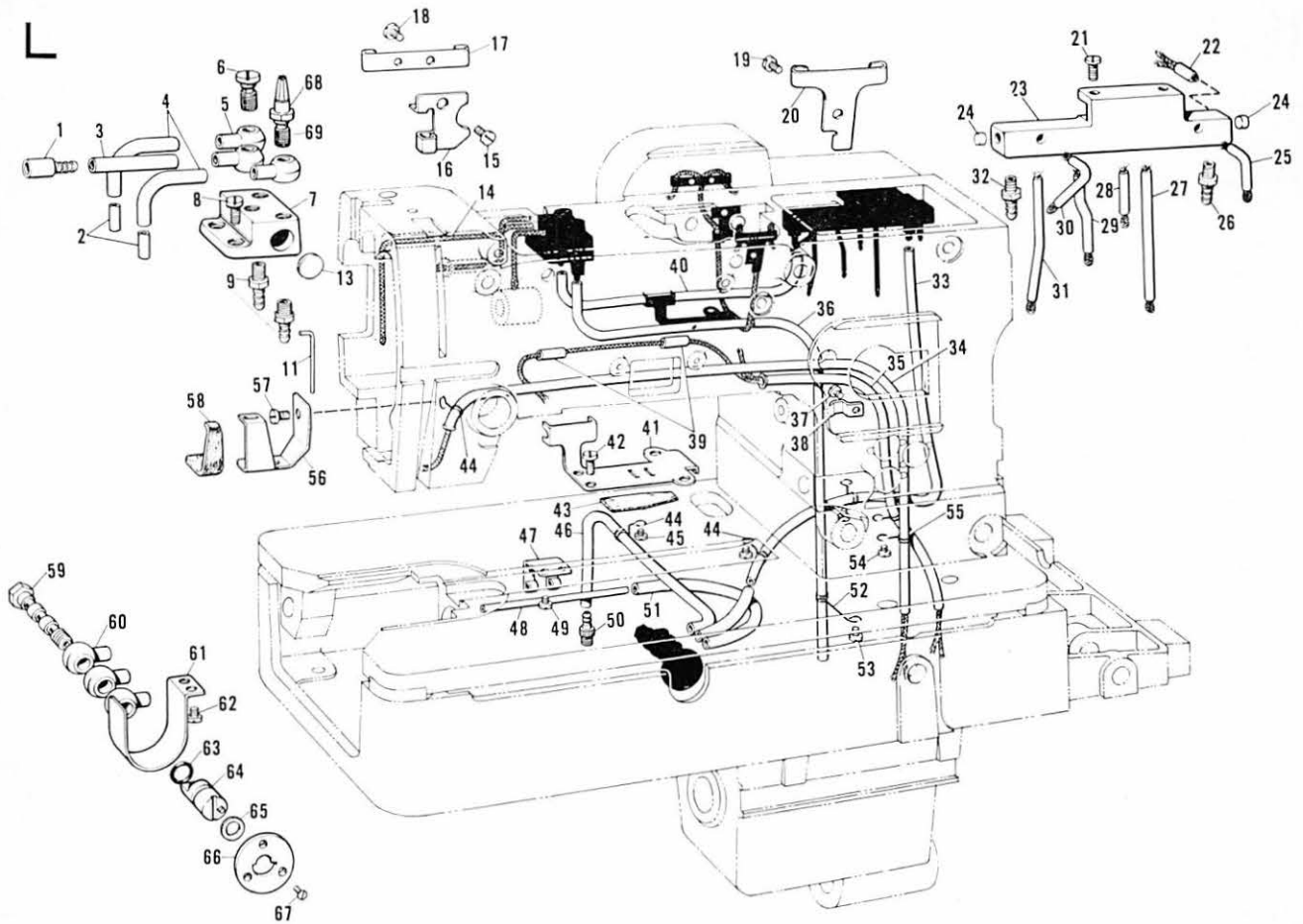


Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
J-1	Upper thread trimming cam	1 pce.	141516-0-01		J-27	Joint for J-24	1 pce.	141492-0-01	
J-2	Set screw SM4.37-40x10 for J-1	2 pcs.	009681-0-12		J-28	Thread guide pin	1 *	141592-0-01	
J-3	Nut for J-6	1 pce.	110161-0-03		J-29	Thread release plate	1 *	145673-0-01	
J-4	Set screw for J-7	1 *	105142-0-02		J-30	Set screw SM4.37-40x8 for J-29	2 pcs.	009680-8-12	
J-5	Upper thread trimming lever (B)	1 *	141502-0-01		J-31	Washer for J-30	2 *	025680-2-32	
J-6	Stud screw for J-5	1 *	141504-0-01		J-32	Set screw for J-42	1 pce.	112657-0-03	
J-7	Upper thread lower blade	1 *	141510-0-01		J-33	Washer for J-32	1 *	141343-0-02	
J-8	Stopper pin for J-10	1 *	141511-0-01		J-34	Upper thread trimming lever holder	1 *	141495-0-01	
J-9	Upper thread middle blade	1 *	141512-0-01	141509-0-01	J-35	Nut for J-36	1 *	100022-0-05	
J-10	Upper thread upper blade	1 *	141513-0-01		J-36	Upper thread trimming connecting bar (short)	1 *	141490-0-01	
J-11	Stud screw for J-10	1 *	141514-0-01		J-37	Stud screw for J-38	1 *	141494-0-01	
J-12	Set screw for J-13	1 *	100541-0-02		J-38	Joint for J-36	1 *	141492-0-01	
J-13	Spring hook	1 *	141506-0-01		J-39	Stud screw	1 *	115493-0-02	
J-14	Spring for J-5	1 *	141505-0-01		J-40	Upper thread trimming connecting block	1 *	141491-0-01	
J-15	Set screw for J-15	2 pcs.	107093-0-01		J-41	Nut for J-40	1 *	100022-0-05	
J-16	Upper thread trimming lever (A)	1 pce.	141497-0-01		J-42	Stud for J-34	1 *	141463-0-01	
J-17	Upper thread trimming lever plate	1 *	145998-0-01		J-43	Hinge for J-34	1 *	141496-0-01	
J-18	Spring for J-17	1 *	141500-0-01		J-44	Washer for J-49	1 *	100281-0-01	
J-19	Set screw for J-18	1 *	101531-0-02		J-45	Hinge pin	1 *	141501-0-01	
J-20	Stud screw for J-17	1 *	141499-0-01		J-46	Spring hook	1 *	141472-0-01	
J-21	Nut for J-24	1 *	100022-0-05		J-47	Spring for J-34	1 *	141517-0-01	
J-22	Connecting pipe for J-24	1 *	141718-0-01		J-48	Spring hook	1 *	107639-0-01	
J-23	Set screw SM5.95-28x6 for J-22	1 *	014760-6-22		J-49	Stop ring for J-43	1 *	048060-3-43	
J-24	Upper thread trimming connecting bar (long)	1 *	141489-0-01		J-50	Joint J-36	1 *	141492-0-01	
J-25	Nut for J-24	1 *	100022-0-05		J-51	Stud screw for J-50	1 *	141494-0-01	
J-26	Stud screw for J-27	1 *	141494-0-01		J-52	Washer for J-4	1 *	100579-0-01	

K

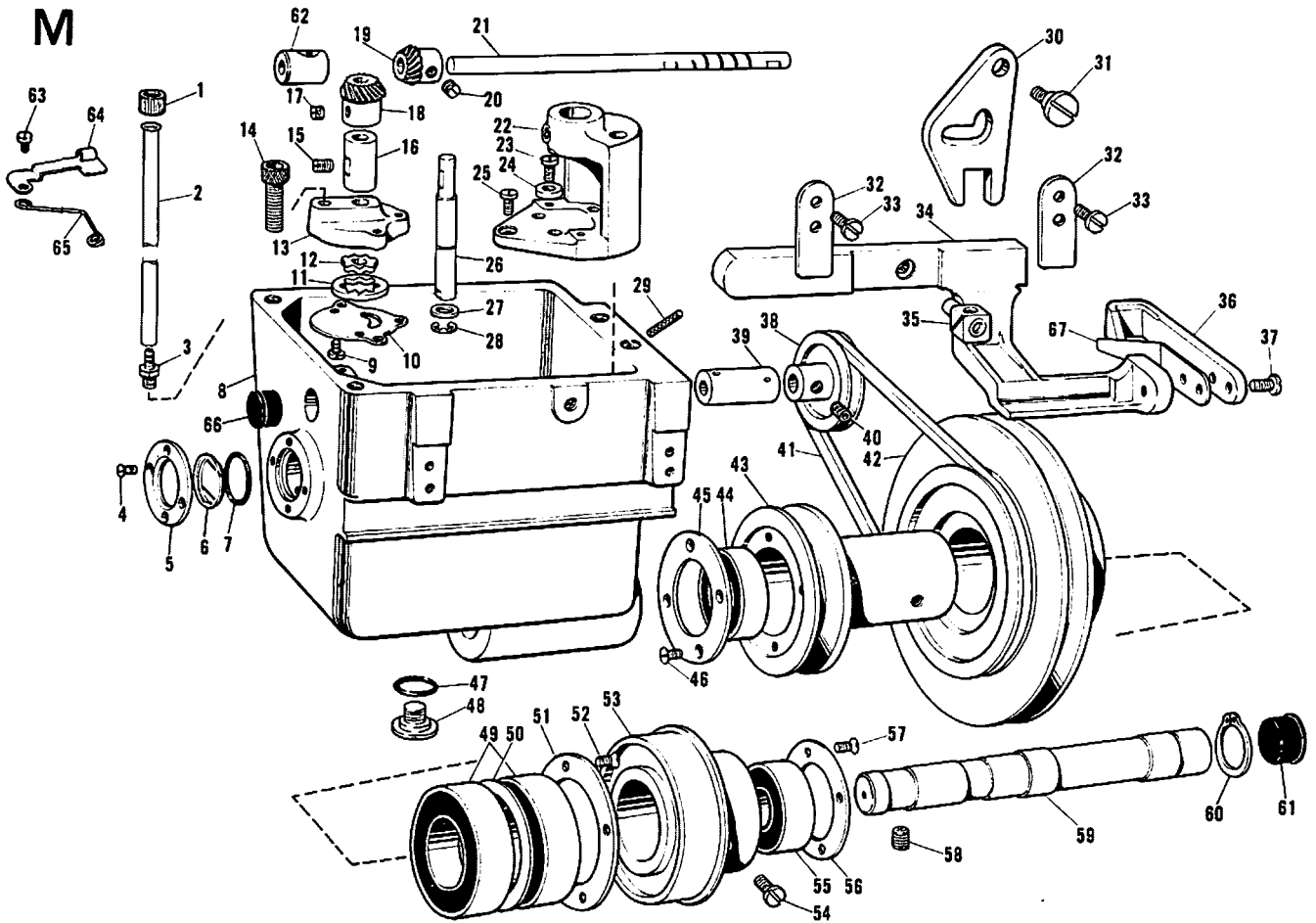


Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.
K-1	Set screw for K-3	1 pce.	017751-4-13		K-34	Spring for K-28	1 pce.	141531-0-01	
K-2	Washer for K-1	1 *	107453-0-01		K-35	Set screw for K-38	1 *	100086-0-04	
K-3	Cutter lever supporting plate	1 *	143945-0-01		K-36	Nut SM6.35-28 for K-40	1 *	021780-3-02	
K-4	Stud for K-6	1 *	143788-0-01		K-37	Set screw SM5.95-28 for K-34	1 *	112657-0-03	
K-5	Set screw SM5.95-28×6 for K-4	1 *	014760-6-22		K-38	Lower thread trimming shaft arm (A)	1 *	141529-0-01	
K-6	Lower thread trimming safety stopper	1 *	141522-0-01		K-39	Lower thread trimming connecting link	1 *	141527-0-01	
K-7	Set screw for K-8	2 pcs.	100032-0-01		K-40	Stud screw for K-39	1 *	141528-0-01	
K-8	Needle plate	1 pce.	141536-0-01		K-41	Set screw for K-42	1 *	100062-0-03	
K-9	Lower thread releaser	1 *	142419-0-01		K-42	Taper pin (right)	1 *	104848-0-01	
K-10	Stud screw for K-9	1 *	142420-0-01		K-43	Stud screw for K-39	1 *	141528-0-01	
K-11	Rotary hook holder position bracket	1 *	141308-0-01		K-44	Stopper screw for K-49	1 *	115585-0-01	
K-12	Set screw for K-11	2 pcs.	102438-0-04		K-45	Nut SM7.94-18	1 *	022840-3-03	
K-13	Set screw for K-14	2 *	141544-0-01		K-46	Set screw for K-47	1 *	107093-0-02	
K-14	Fixed knife	1 pce.	141543-0-01		K-47	Upper thread trimming detach plate	1 *	141508-0-01	
K-15	Lower thread release plate	1 *	142416-0-01		K-48	Nut for K-61	1 *	110161-0-04	
K-16	Movable knife	1 *	141541-0-01		K-49	Lower thread cutter lever	1 *	141518-0-01	
K-17	Set screw K-16	2 pcs.	141542-0-01		K-50	Set screw SM5.95-28×10 for K-54	1 *	009761-0-01	
K-18	Bushing (A)	1 pce.	141538-0-01		K-51	Washer for K-50	1 *	141343-0-01	
K-19	Bushing (B)	1 *	141539-0-01		K-52	Bushing (small)	1 *	142373-0-00	
K-20	Knife setting plate	1 *	141537-0-01		K-53	Bushing (large)	1 *	142372-0-01	
K-21	Washer for K-20	1 *	512769-0-01		K-54	Lower thread trimming lever shaft	1 *	141520-0-01	
K-22	Set screw for K-18	1 *	105451-0-01		K-55	Stud for K-56	1 *	141526-0-01	
K-23	Link for K-25	1 *	141534-0-01		K-56	Lower thread trimming cam	1 *	141523-0-01	
K-24	Stud screw for K-23	2 pcs.	141535-0-01		K-57	Washer for K-58	1 *	025050-2-33	
K-25	Lower thread trimming shaft arm (B)	1 pce.	141533-0-01		K-58	Set screw for K-55	1 *	106629-0-01	
K-26	Taper pin (left)	1 *	104847-0-01		K-59	Stop ring for K-61	1 *	048030-3-42	
K-27	Set screw for K-26	1 *	100062-0-03		K-60	Roller for K-61	1 *	107744-0-01	
K-28	Lower thread trimming shaft	1 *	141530-0-01		K-61	Roller stud	1 *	141519-0-01	
K-29	Set screw for K-25	1 *	107274-0-02		K-62	Nut SM6.35-28 for K-43	1 *	021780-3-02	
K-30	Set screw SM6.35-40×6 for K-31	2 pcs.	014770-6-22		K-63	Spring hook	1 *	141472-0-01	
K-31	Set collar for K-28	1 pce.	141532-0-01		K-64	Spring for K-49	1 *	141521-0-01	
K-32	Shaft supporter	1 *	141545-0-00		K-65	Spring hook	1 *	141472-0-01	
K-33	Set screw for K-32	2 pcs.	110767-0-01		K-66	Fixed washer for K-3	1 *	143927-0-01	



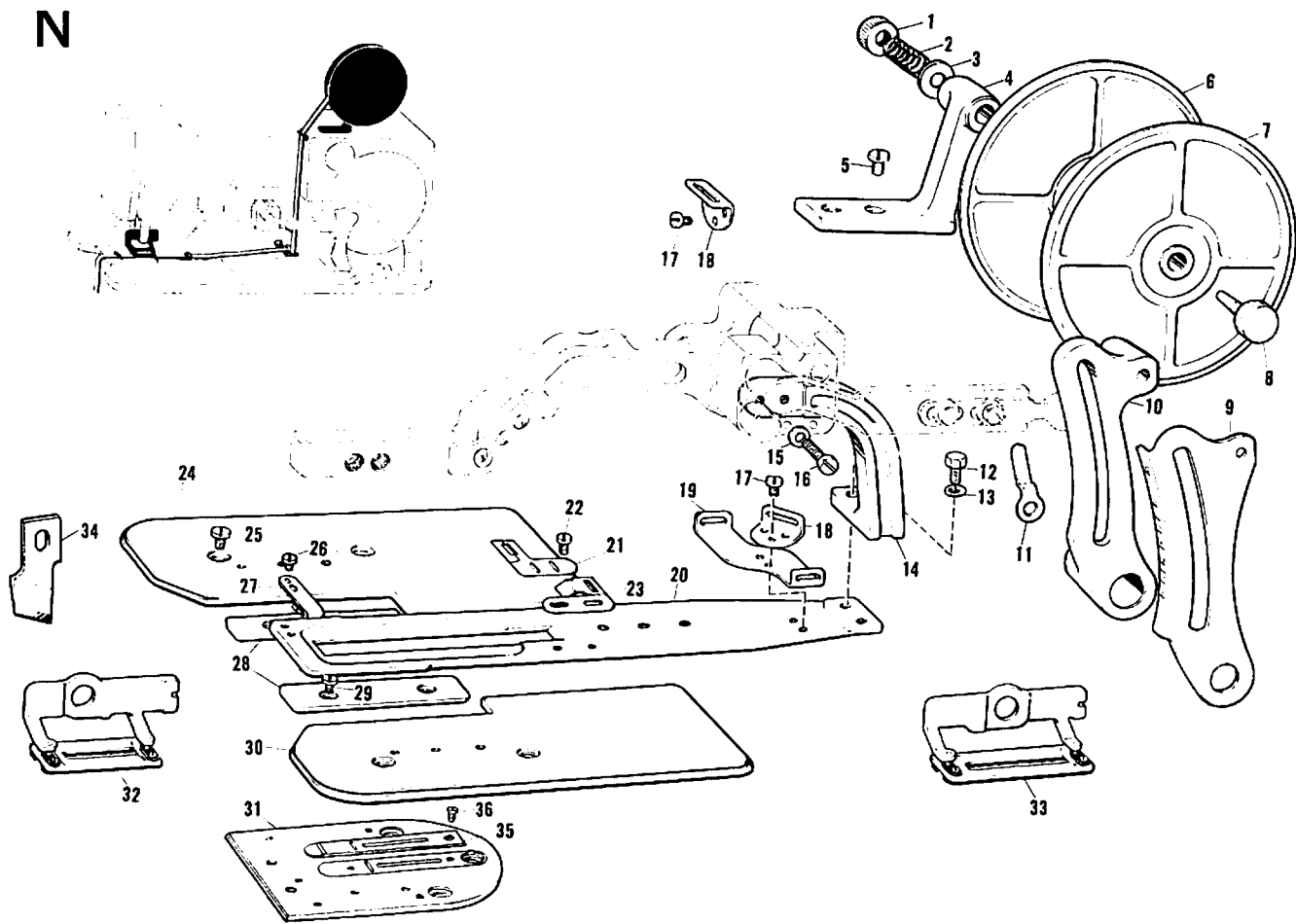
Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.
L-1	Oil feeding pipe (B)	1 pce.	141680-0-01	142354-0-01	L-37	Set screw for L-38	1 pce.	100242-0-03	
L-2	Vinyl tube (B)	2 pcs.	141679-0-01		L-38	Tube holder	1 *	142268-0-01	
L-3	Vinyl tube 4×54	1 pce.	141658-0-00		L-39	Vinyl tube 3×20	2 pcs.	120774-0-01	
L-4	Vinyl tube 4×48	2 pcs.	141675-0-00		L-40	Vinyl tube 3×230	1 pce.	141670-0-00	
L-5	Vinyl tube joint	2 *	140910-0-01		L-41	Vinyl tube holder	1 *	141671-0-01	
L-6	Set screw for L-5	3 *	112359-0-01		L-42	Set screw for L-41	2 pcs.	100137-0-02	
L-7	Wick base (A)	1 pce.	141673-0-00		L-43	Felt for L-41	1 pce.	141672-0-00	
L-8	Set screw for L-7	2 pcs.	100137-0-02		L-44	Tube stopper	4 pcs.	112744-0-01	
L-9	Oil feeding pipe	2 *	142359-0-01		L-45	Set screw for L-44	4 *	009689-4-12	
L-11	Vinyl tube 0.5	1 pce.	143177-0-01		L-46	Vinyl tube 4×210	1 pce.	142351-0-01	
L-13	Cap for L-7	1 *	141674-0-01		L-47	Tube holder for L-48	1 *	141656-0-01	
L-14	Wick 4×4	1 *	141681-0-01		L-48	Oil pipe for rotary hook	1 *	141655-0-00	
L-15	Set screw for L-16	1 *	009680-6-12		L-49	Set screw for L-47	2 pcs.	009670-6-12	
L-16	Wick holder (B)	1 *	141686-0-01		L-50	Oil feeding pipe	1 pce.	142748-0-01	
L-17	Wich holder (C)	1 *	141688-0-01		L-51	Vinyl tube 4×160	1 *	142352-0-01	
L-18	Set screw for L-17	2 pcs.	100242-0-03		L-52	Tube stopper	1 *	116975-0-01	
L-19	Set screw for L-20	1 pce.	009680-6-12		L-53	Set screw for L-52	1 *	100242-0-03	
L-20	Wick holder (A)	1 *	141685-0-01		L-54	Set screw L-55	1 *	100242-0-03	
L-21	Set screw for L-23	2 pcs.	100137-0-02		L-55	Tube stopper	2 pcs.	141692-0-01	
L-22	Oil tube (A)	1 pce.	141663-0-01		L-56	Wick holder (D)	1 pce.	141689-0-01	
L-23	Wick base (B)	1 *	141662-0-00		L-57	Set screw for L-56	1 *	107419-0-02	
L-24	Oil cap	1 *	110104-0-00		L-58	Felt for L-57	1 *	142271-0-00	
L-25	Oil tube (B)	1 *	141664-0-01		L-59	Oil feeding pipe	1 *	141651-0-01	
L-26	Oil feeding pipe	1 *	142359-0-01		L-60	Vinyl tube joint	1 *	140910-0-01	
L-27	Oil tube (C)	1 *	141665-0-01		L-61	Cover for L-64	1 *	141654-0-01	
L-28	Oil tube (H)	1 *	116968-0-02		L-62	Set screw for L-61	2 pcs.	009670-6-12	
L-29	Oil tube (E)	1 *	141666-0-01		L-63	Packing	1 pce.	104564-0-01	
L-30	Oil tube (G)	1 *	141668-0-01		L-64	Oil adjusting bracket	1 *	141652-0-01	
L-31	Oil tube (F)	1 *	141667-0-01		L-65	Washer for L-66	1 *	100052-0-01	
L-32	Oil feeding pipe	1 *	142359-0-01		L-66	Cap plate for L-64	1 *	141653-0-01	
L-33	Vinyl tube 3×460	1 *	142353-0-01		L-67	Set screw for L-66	3 pcs.	102538-0-02	
L-34	Vinyl tube 3×440	1 *	141690-0-00		L-68	Pipe for oil gauge window	1 pce.	143715-0-01	
L-35	Vinyl tube 3×190	1 *	142742-0-00		L-69	Pipe screw for L-68	1 *	143716-0-01	
L-36	Vinyl tube 3×420	1 *	141683-0-00						

M



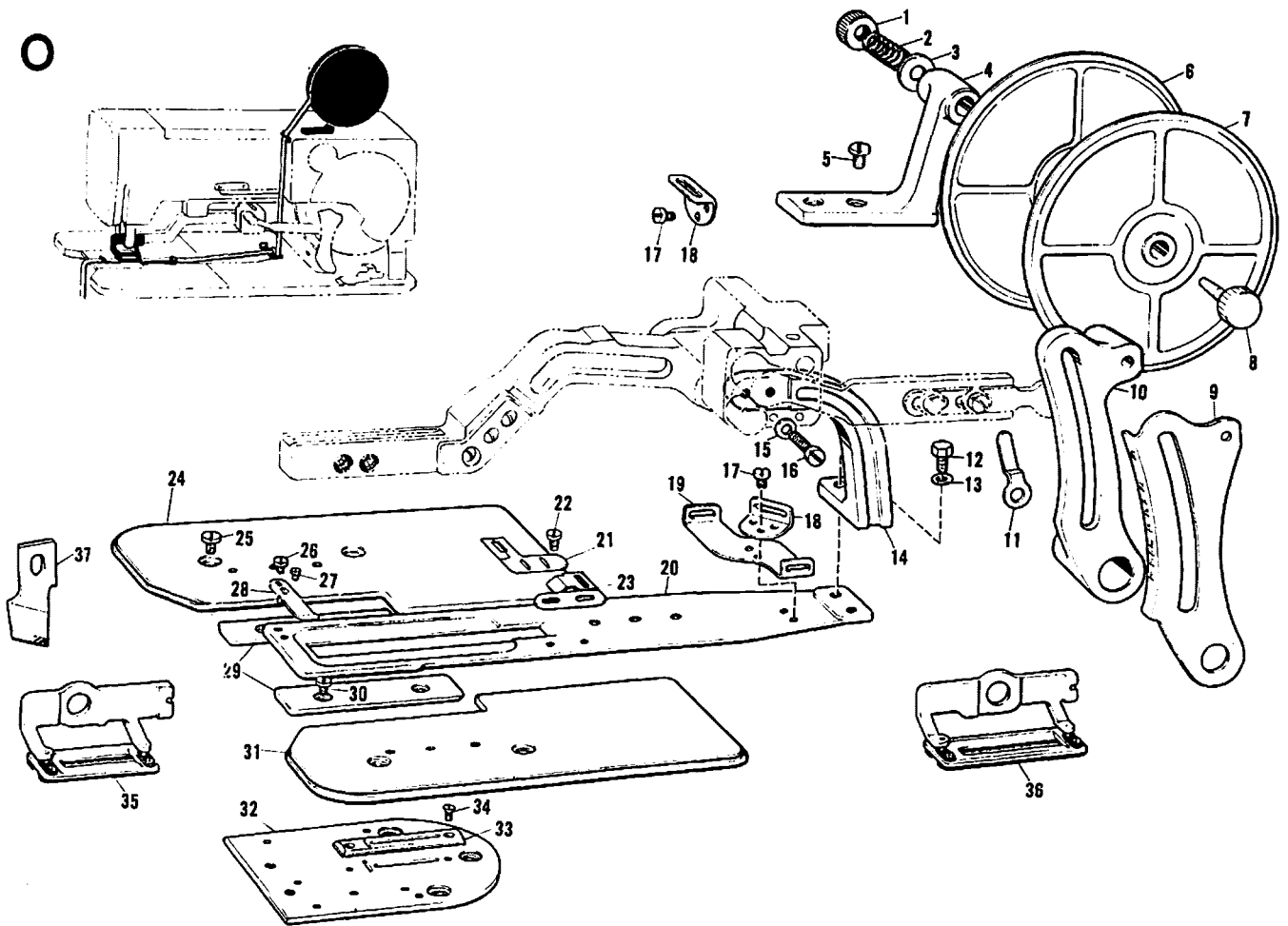
Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
M-1	Nut for M-2	1 pce.	142750-0-01		M-35	Slide block for M-30	1 pce.	141586-0-01	141584-0-01
M-2	Vinyl tube	1 "	141647-0-00		M-36	Belt shifter	1 "	141589-0-01	
M-3	Oil feeding pipe	1 "	142359-0-01		M-37	Set screw SM4.76-32×10 for M-36	2 pcs.	009711-0-13	
M-4	Set screw for M-5	4 pcs.	102538-0-02		M-38	Pulley for oil pump	2 "	146956-0-01	
M-5	Oil gauge flange	1 pce.	104546-0-01		M-39	Bushing for M-21	1 pce.	142766-0-01	
M-6	Oil gauge window	1 "	141696-0-01		M-40	Set screw for M-38	4 pcs.	100251-0-01	
M-7	Packing for M-6	1 "	081014-6-70		M-41	V-belt 430	1 pce.	141636-0-00	
M-8	Transmitter base	1 "	143981-0-01		M-42	Slow speed pulley	1 "	141568-0-00	
M-9	Set screw for M-10	3 pcs.	100137-0-01		M-43	High speed pulley (A)	1 "	141571-0-00	
M-10	Pump cap plate	1 pce.	141646-0-01		M-44	Bearing 6004 VV	1 "	072600-4-60	
M-11	Pump outer rotor	1 "	141642-0-01		M-45	Bearing cap	1 "	141573-0-01	
M-12	Pump inner rotor	1 "	141643-0-01		M-46	Set screw SM3.18-40×8 for M-45	4 pcs.	003660-8-12	
M-13	Pump body	1 "	141645-0-01		M-49	Bearing 6007VV	2 "	072600-7-60	
M-14	Set bolt M8×25 for M-13	3 pcs.	018082-5-22		M-50	Bearing washer	1 pce.	141569-0-00	
M-15	Set screw SM5.95-28×6 for M-16	1 pce.	014760-6-22		M-51	Bearing cap	1 "	141570-0-01	
M-16	Bushing for M-26	1 "	142768-0-01		M-52	Set screw SM3.18-40×8 for M-51	4 pcs.	003660-8-12	141566-0-01
M-17	Set screw for M-18	2 pcs.	014770-6-22		M-53	High speed pulley (B)	1 pce.	141572-0-00	
M-18	Pump shaft gear	1 pce.	143898-0-01		M-54	Set screw SM4.76-32×14 for M-53	2 pcs.	009711-4-12	
M-19	Pump pulley shaft gear	1 "	117875-0-01	143915-0-01	M-55	Bearing 6004 VV	1 pce.	072600-4-60	
M-20	Set screw for M-19	2 pcs.	014770-6-22		M-56	Bearing cap	1 "	141573-0-01	
M-21	Pump pulley shaft	1 pce.	146957-0-01		M-57	Set screw SM3.18-60×8 for M-56	4 pcs.	003660-8-12	
M-22	Pump supporter base	1 "	142763-0-01		M-58	Set screw for M-59	2 pcs.	110032-0-02	
M-23	Set screw for M-22	2 pcs.	100522-0-02		M-59	Transmitter shaft	1 pce.	141567-0-01	
M-24	Washer for M-23	2 "	142776-0-00		M-60	Stop ring	1 "	048200-1-42	
M-25	Set screw SM4.76-32×10 for M-22	3 "	009711-0-12		M-47	Packing for M-48	1 "	109203-0-01	
M-26	Pump shaft	1 pce.	142764-0-01		M-48	Set screw for	1 "	110641-0-01	
M-27	Washer for M-28	1 "	110494-0-01		M-61	Oil cap	1 "	111937-0-01	
M-28	Stop ring	1 "	048070-3-42		M-62	Bushing (front) for M-21	1 "	143983-0-01	
M-29	Wick 4×4	1 "	141681-0-01		M-63	Set screw for M-64	1 "	105123-0-01	
M-30	Belt shifter cam	1 "	141582-0-01		M-64	Wick holder spring plate	1 "	112730-0-01	
M-31	Stud screw for M-30	1 "	141583-0-01		M-65	Oil tube holder	1 "	116975-0-01	
M-32	Belt shifter guide	2 pcs.	141588-0-01		M-66	Cap for M-8	1 "	108520-0-01	
M-33	Set screw SM4.37-40×32	4 "	009680-8-13		M-67	Belt shifter spring plate	1 "	145931-0-01	
M-34	Belt shifter bracket	1 pce.	141585-0-01	141584-0-01					

N



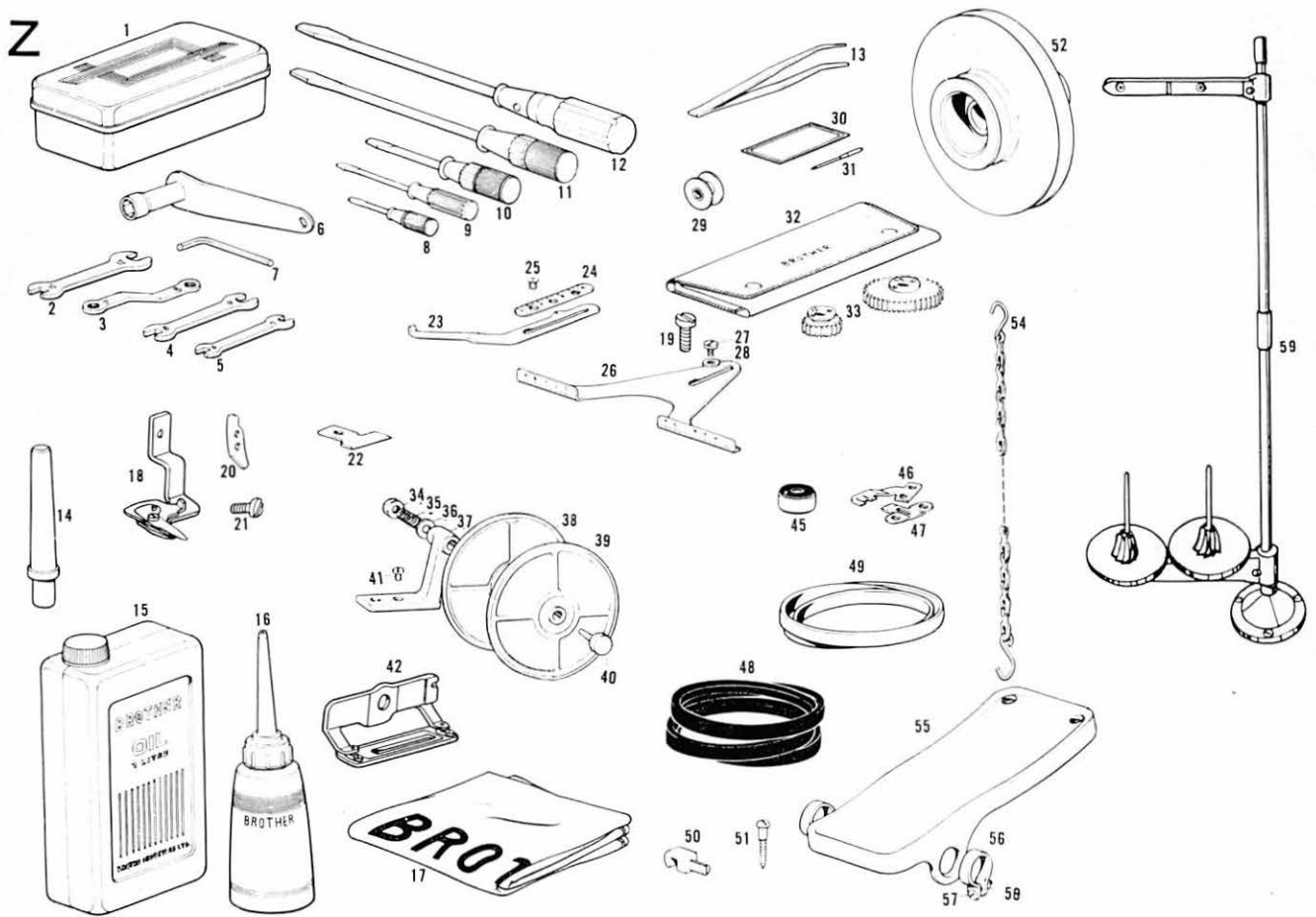
PARTS LIST for LH4-B814-2

Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Q'ty	Parts No.	Assembly No.
This chart shows the different parts from Model LH4-B814-1. Other parts are same as LH4-B814-1.									
N-1	Nut	1 pce.	100136-0-01		N-20	Length feed plate	1 pce.	145248-0-01	
N-2	Spring	1 "	108495-0-01		N-21	Tape guide front	1 "	144999-0-01	
N-3	Washer	1 "	108494-0-01		N-22	Set screw for N-21	2 pcs.	105288-0-02	
N-4	Tape winder bracket	1 "	143750-0-01	143767-0-01	N-23	Tape guard rear	1 pce.	144998-0-01	
N-5	Tape holder wheel (left)	1 "	143976-0-01		N-24	Bed cover left	1 "	143742-0-01	
N-6	Tape holder wheel (right)	1 "	143978-0-01		N-25	Set screw for N-24	4 pcs.	107407-0-02	
N-7	Set screw for N-6,7	1 "	143980-0-01		N-26	Set screw for N-27	2 "	105282-0-01	
N-8	Set screw for N-4	2 pcs.	107407-0-02		N-27	Tape guard front	1 pce.	144997-0-01	
N-9	Length feed indicator plate	1 pce.	143740-0-01		N-28	Length feed guide plate	2 pcs.	143743-0-01	
N-10	Length feed adjusting lever	1 "	143739-0-01		N-29	Set screw for N-28	4 "	106568-0-01	
N-11	Stopper for N-9	1 "	144541-0-01		N-30	Bed cover right	1 pce.	143741-0-01	
N-12	Set bolt for N-14	2 pcs.	111048-0-02		N-31	Base plate	1 "	145245-0-01	
N-13	Washer for N-12	2 "	113431-0-01		N-35	Needle plate	1 "	145246-0-01	145244-0-01
N-14	Lower feed arm	1 pce.	143738-0-01		N-36	Set screw for N-35	2 pcs.	145247-0-01	
N-15	Washer	2 pcs.	100645-0-03		N-32	Upper clamping rubber foot (16mm)	1 pce.	145145-0-01	
N-16	Set screw 4.37x20	4 "	009682-0-11		N-32	Upper clamping rubber foot (25mm)	1 "	144497-0-01	
N-17	Set screw for N-18	2 "	100130-0-01		N-33	Upper clamping rubber foot (32mm)	1 "	144574-0-01	
N-18	Tape guide upper	2 "	143748-0-01		N-34	Cutter 1"	1 "	107210-0-01	
N-19	Tape guide lower	1 pce.	143749-0-01			" 1 1/2"	1 "	143780-0-01	



PARTS LIST for LH4-B814-3

Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
The chart shows the different parts from Model LH4-B814-1. Other parts are same as LH4-B814-1.									
0-1	Nut	1 pce.	100136-0-01		0-24	Bed cover left	1 pce.	143742-0-01	
0-2	Spring	1 -	108495-0-01		0-25	Set screw for 0-24	4 pcs.	107407-0-02	
0-3	Washer	1 -	108494-0-01		0-26	Set screw for 0-27	1 pce.	105282-0-01	
0-4	Tape winder bracket	1 -	143750-0-01	143767-0-01	0-27	Set screw for 0-27	1 -	105970-0-01	
0-6	Tape holder wheel (left)	1 -	143976-0-01		0-28	Tape guard front	1 -	144628-0-01	
0-7	Tape holder wheel (right)	1 -	143978-0-01		0-29	Length feed guide plate	2 pcs.	143743-0-01	
0-8	Set screw for N-6.7	1 -	143980-0-01		0-30	Set screw for 0-29	4 -	106568-0-01	
0-5	Set screw for 0-4	2 pcs.	107407-0-02		0-31	Bed cover right	1 pce.	143741-0-01	
0-9	Length feed indicator plate	1 pce.	143740-0-01		0-32	Base plate	1 -	144634-0-01	
0-10	Length feed adjusting lever	1 -	143739-0-01		0-33	Needle plate for 1.2mm needle hole	1 -	144635-0-01	144633-0-01
0-11	Stopper for 0-9	1 -	144541-0-01		0-34	Set screw for 0-33	2 pcs.	111073-0-01	
0-12	Set bolt for 0-14	2 pcs.	111048-0-02		0-32	Base plate	1 pce.	144634-0-01	
0-13	Washer for 0-12	2 -	113431-0-01		0-33	Needle plate for 1.4mm needle hole	1 -	144637-0-01	144636-0-01
0-14	Lower feed arm	1 pce.	143738-0-01		0-34	Set screw for 0-33	2 pcs.	111073-0-01	
0-15	Washer	2 pcs.	100645-0-03		0-32	Base plate	1 pce.	144634-0-01	
0-16	Set screw 4.37x20	2 -	009682-0-11		0-33	Needle plate for 1.6mm needle hole	1 -	144639-0-01	144638-0-01
0-17	Set screw for 0-18	4 -	100130-0-01		0-34	Set screw for 0-33	2 pcs.	111073-0-01	
0-18	Tape guide upper	2 -	143748-0-01		0-35	Upper clamping rubber foot (16mm)	1 pce.	145135-0-01	
0-19	Tape guide lower	1 pce.	143749-0-01		0 -	Upper clamping rubber foot (25mm)	1 -	144629-0-01	
0-20	Length feed plate	1 -	144627-0-01		0-36	Upper clamping rubber foot (32mm)	1 -	144631-0-01	
0-21	Tape guide front	1 -	144999-0-01		0-37	Cutter 1"	1 -	107210-0-01	
0-22	Set screw for 0-21	2 pcs.	105288-0-02				1 -	143780-0-01	
0-23	Tape guard rear	1 pce.	144998-0-01						



Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.	Ref. No.	Name of Parts	Qty	Parts No.	Assembly No.
● Z-1	Accessory box	1 pce.	110436-0-01						
Z-2	Wrench 10×12	1 =	107780-0-01			Gear 30	1 pce.	141376-0-00	
Z-3	Spanner 8×9	1 =	105343-0-01			= 32	1 =	141377-0-00	
Z-4	Wrench 8×9	1 =	100887-0-01			= 34	1 =	141378-0-00	
Z-5	Wrench 6×7	1 =	107779-0-01		Z-33	= 36	1 =	141379-0-00	
Z-6	Box wrench (12mm)	1 =	143949-0-01			= 38	2 pcs.	141380-0-00	
● Z-7	Allen wrench (3mm)	1 =	142721-0-01			= 40	1 pce.	141381-0-00	
Z-8	Screwdriver 2×50	1 =	142443-0-01			= 42	1 =	141382-0-00	
Z-9	Screwdriver 2.6×70	1 =	105344-0-01			= 44	1 =	141383-0-00	
Z-10	Screwdriver 5.5×75	1 =	102629-0-04		Z-34	Nut	1 =	100136-0-01	
Z-11	Screwdriver 5.5×200	1 =	101572-0-01		Z-35	Spring	1 =	108495-0-01	
Z-12	Screwdriver 6.4×204	1 =	100472-0-01		Z-36	Washer	1 =	108494-0-01	
● Z-13	Tweezer	1 =	117466-0-00		Z-37	Tape winder bracket	1 =	143750-0-01	143767-0-01
Z-14	Head rest	1 =	142005-0-00		Z-38	Tape winder wheel (left)	1 =	143976-0-01	
Z-15	Oil	1 =	145277-0-03		Z-39	Tape winder wheel (right)	1 =	143978-0-01	
Z-16	Oiler	1 =	114483-0-01		Z-40	Screw	1 =	143980-0-01	
Z-17	Head cover	1 =	144226-0-01		● Z-41	Screw	1 =	107407-0-02	
● Z-18	Upper thread blade assembly	1 =	141509-0-01		● Z-42	Clamping foot (32mm) assembly for-2	1 =	144574-0-01	
Z-19	Bolt	1 =	111048-0-02		"	Clamping foot (32mm) assembly for-3	1 =	144631-0-01	
● Z-20	Stop cam	1 =	142734-0-01		Z-45	Collar	4 pcs.	144580-0-01	
● Z-21	Screw for Z-20	2 pcs.	009680-8-12		● Z-46	Movable knife	1 pce.	141541-0-01	
● Z-22	Cutter 3/8"	1 pce.	109837-0-01		● Z-47	Fixed knife	1 =	141543-0-01	
●	" 5/8"	1 =	107204-0-01			V belt 41" for 60 Hz	2 pcs.	082104-1-90	
●	" 1/2"	1 =	107200-0-01		Z-48	V belt 42" for 50 Hz	1 pce.	082104-2-90	
●	" 3/4"	1 =	107205-0-01			V belt 43" for 50 Hz	1 =	082104-3-90	
●	" 1"	1 =	107207-0-01		Z-49	Flat belt	1 =	141711-0-00	
●	" 1 1/4"	1 =	109838-0-01		Z-50	Head hook	2 pcs.	141256-0-01	
●	" 1 1/2"	1 =	107210-0-01		Z-51	Screw	4 =	101125-0-00	
●	" 1 3/4"	1 =	143780-0-01			Motor pulley (14φ) for 50 Hz	1 pce.	141707-0-01	
● Z-23	Cloth guide (A)	1 =	141706-0-01		Z-52	Motor pulley (15.8φ) for 50 Hz	1 =	145781-0-01	
● Z-24	Indicator plate	1 =	142358-0-01			Motor pulley (14φ) for 60 Hz	1 =	141709-0-01	
● Z-25	Screw	2 pcs.	117143-0-02			Motor pulley (15.88φ) for 60 Hz	1 =	145780-0-01	
Z-26	Cloth guide (B)	1 pce.	141705-0-01		Z-53	Screw	2 pcs.	013760-8-12	
Z-27	Bolt	2 pcs.	107488-0-02		Z-54	Chain	2 =	142262-0-01	
Z-28	Washer	2 =	116662-0-02		Z-55	Foot pedal	2 =	117437-0-01	
● Z-29	Bobbin	3 =	117480-0-01		Z-56	Foot pedal stoper	4 =	116016-0-01	
● Z-30	Needle bag	1 pce.	108962-0-01		Z-57	Screw	4 =	001401-4-06	
● Z-31	Needle DP×5 ±14	10 pcs.	107415-0-14		Z-58	Nut	4 =	021400-1-06	
Z-32	Gear case	1 pce.	142745-0-01		Z-59	Thread stand assembly	1 pce.	142972-0-01	

Remark

※ The parts with mark (●) are in accessory box.



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