Single Needle 18” Long Arm
- Lockstitch
- Walking foot

Model : NC18L

NC CARPET BINDING & EQUIPMENT
858 Summer Avenue
Newark, N J 07104

P 973-481-3500
www.nccarpet.com
sales@nccarpet.com

BEFORE OPERATION

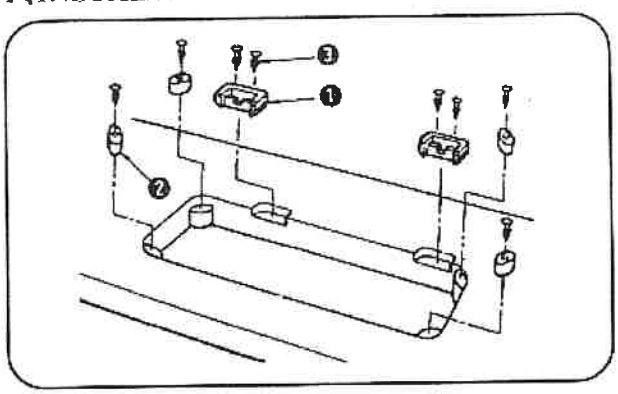
CAUTION:
Check the following so as to prevent maloperation of and damage to the machine.

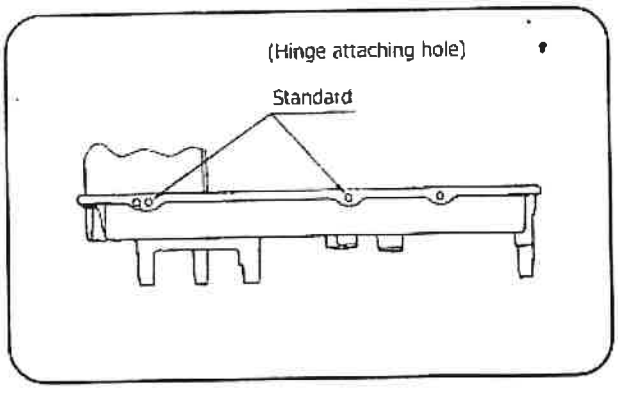
- Before you put the machine into operation for the first time after the set – up, clean it thoroughly. Remove all dust gathering during transportation and oil it well.
- Confirm that the voltage has been correctly set.
  Confirm that the power plug has been properly connected to the power supply.
- Never use the machine in the state where the voltage type is different from the designated one.
- The direction of normal rotation of the machine is counterclockwise as observed from the pulley side. Take care not to allow the machine to rotate in the reverse direction.
- When tilting the machine head, tilt it after removing knee lifter hook.
- Never operate the machine unless the head base has been tilled with oil.
- For a test run, remove the bobbin and the needle thread.
- Operate the handwheel after the machine has totally stopped.

SPECIFICATIONS

Model		
Sewing speed	Max. 2500 rpm See "21. SEWING SPEED TABLE" on page 12.	Max. 2000 rpm See "21. SEWING SPEED TABLE" on page 12.
Stitch length (max.)	Normal feed: 9mm Reverse feed: 9mm	Normal feed: 10mm Reverse feed: 10mm
Needle	SCHMETZ 135 x 17(Nm 125 to Nm 180) (Standard: Nm 160)	SCHMETZ 190(Nm 125 to Nm 180) (Standard; Nm 160)
Thread	#30 to #5(US: #46 to #138, Europe: 20/3 to 60/3)	#8 to #1(US: #92 to #266, Europe: 15/3 to 30/3)
Hook	Vertical – axis 2. 0 – fold capacity hook	
Lift of presser foot	Hand lifter lever: 9mm Knee lifter: 16mm	
Lubricating oil	New Defrix Oil No. 2	
Noise	Workplace – related noise at sewing speed · n = 1800min⁻¹: $L_{PA} \leqq 84$ dB(A) Noise measurement according to DIN 45635 – 48 – A – 1.	Workplace – related noise at sewing speed n = 1250min⁻¹: $L_{PA} \leqq 84$ dB(A) Noise measurement according to DIN 45635 – 48 – A – 1.

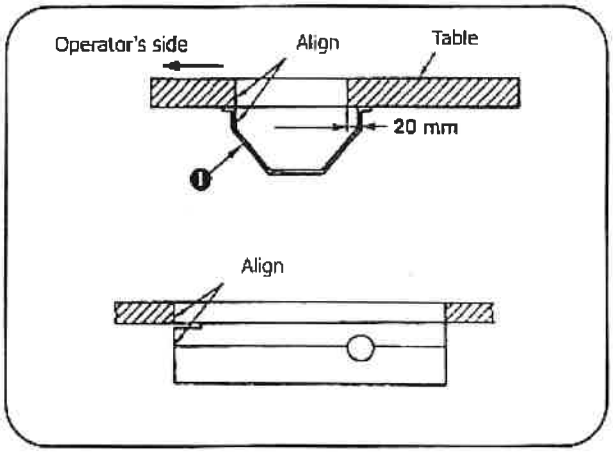
1、INSTALLATION

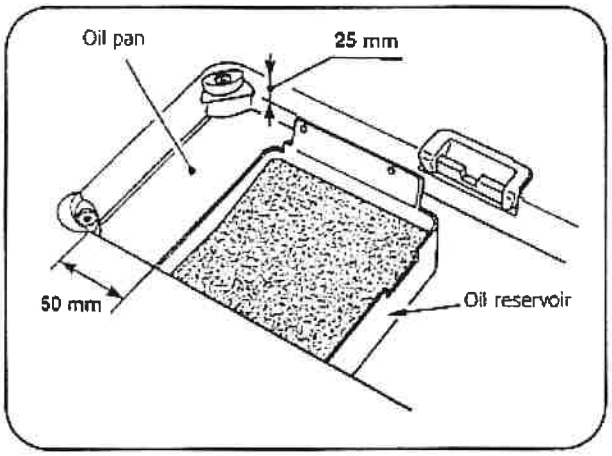




1) Attaching the hinge seats and the support rubbers of the machine head

Fix the hinge seats ❶ and the support rubbers ❷ supplied with the machine on the table using nails ❸.



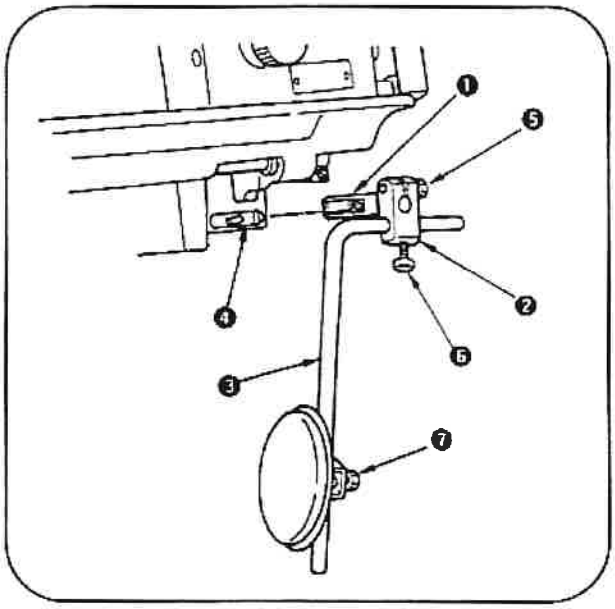


2) Attaching the oil pan

Fix the oil pan ❶ supplied with the machine by tightening eight wood screws.

3) Attaching the oil reservoir

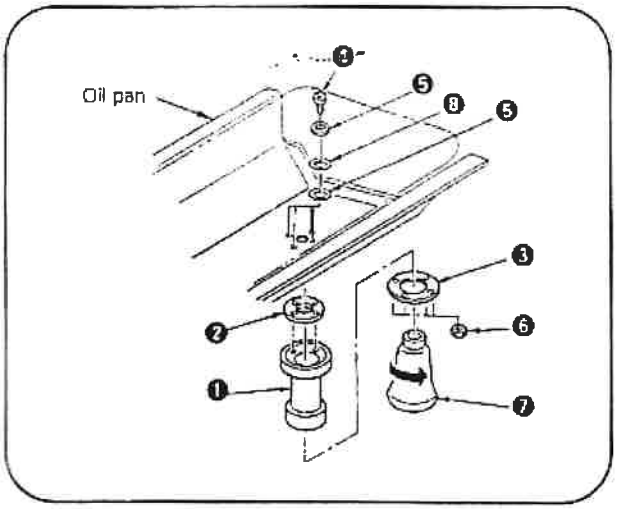
Fix the oil reservoir supplied with the machine on the four corners of the table using nails.



4) Adjust knee pad joint ❶, knee lifter vertical shaft installing arm ❷ and knee pad lever ❸ to the direction of knee lifter lever shaft ❹ and assemble these components.

5) Adjust the direction of the pad with setscrews ❺, ❻ and ❼.

2、INSTALLING THE WASTE OIL CONTAINER

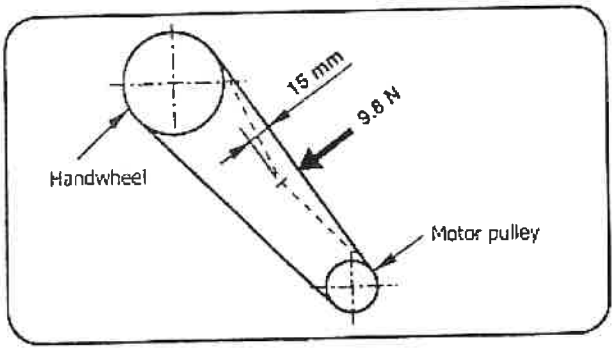


1) Attach drain plug ❶, oil sea ❷ and washer ❸ to the oil pan. Attach packing ❺ and washer ❽ to screw ❹ and fix them with nut ❻.

2) After they are fixed, screw in waste oil container ❼ into drain plug ❶.

3、ADJUSTING THE BELT TENSION

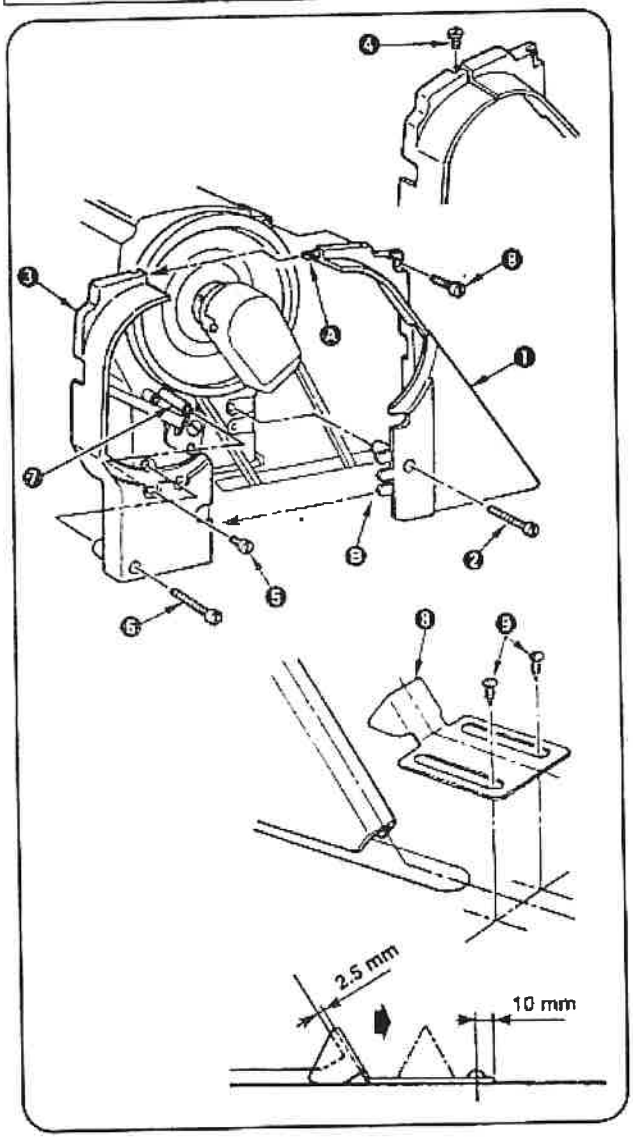
WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



Adjust the belt tension with the height of the motor so that the belt sags 15mm when the center of V belt is applied with a 9.8 N load.

4、ATTACHING THE BELT COVER

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.

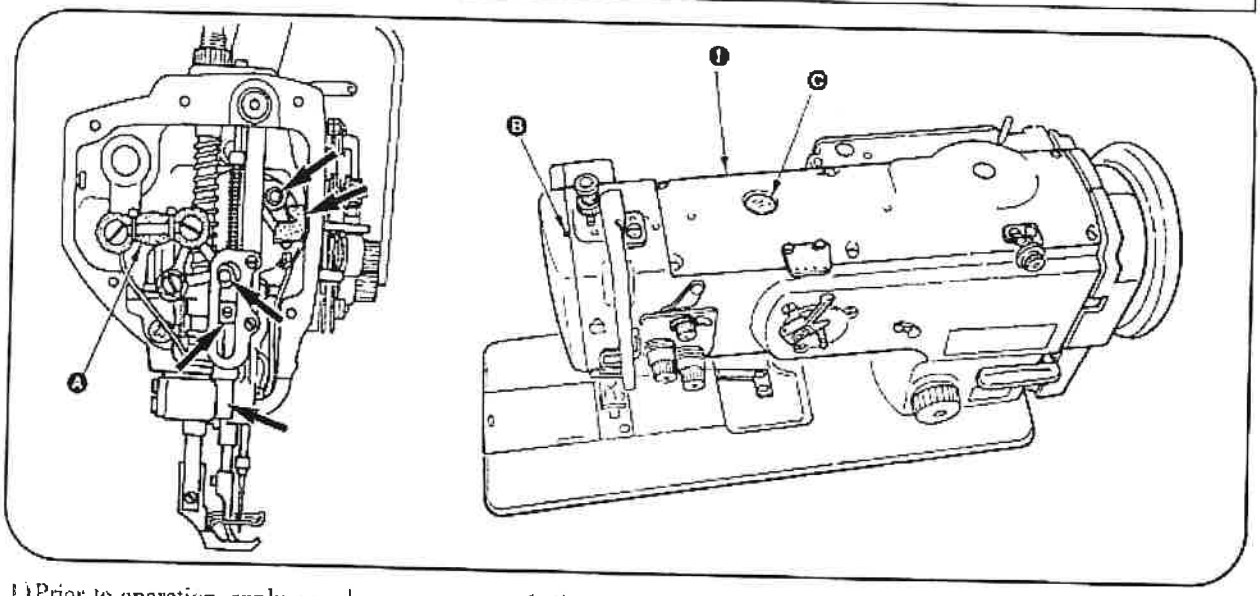


1) Attach belt cover stud ❼ to the screw hole in the arm.
2) Fix belt cover (right) ❶ on the arm with screws ❷ and ❽.
3) Fit belt cover(left) ❸ to notch Ⓐ and Ⓑ of the belt cover(right).
4) Fix belt cover(left) ❸ with screws ❹, ❺ and ❻.
5) Fix belt cover auxiliary plate ❽ at the position of 10mm from the rear end with wood screws ❾ when there is a clearance of 2.5mm between the belt cover and the auxiliary plate.
6) When tilting the machine head, loosen wood screws ❾ and move the belt cover auxiliary plate in the direction of the arrow until it stops. Then, tilt the machine head.

(Caution) After attaching the belt cover, confirm whether or not the respective cords do not come in contact with the belt and the handwheel. Disconnection of the cords will result when they come in contact with one another.

5、LUBRICATION

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.

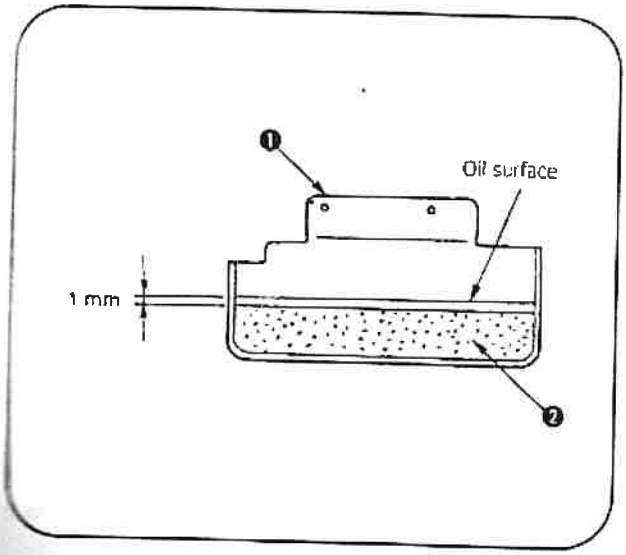


1) Prior to operation, apply an adequate amount of oil once a day to the points marked with the arrows Ⓐ.
Prior to operation, apply one drop of oil once a day to the point marked with the arrow Ⓑ.

※ You can apply oil to the point marked with Ⓐ after removing the rubber cap without removing the face plate.
Apply oil (5ml) to Ⓒ approximately once a week since they are oil tanks.

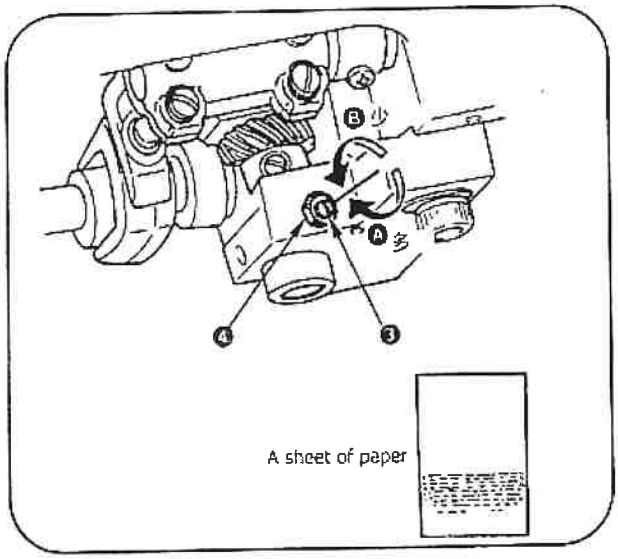
2) When you operate your machine for the first time after the set – up or after an extended period of disuse, apply an adequate amount of oil to the points marked with the arrows and to each felt and oil wick after removing top cover ❶.

(Caution) If oil is filled more than required, oil leakage may result.



3) Put sponge ❷ in oil pan ❶ and fill the oil reservoir with oil so that the oil surface in higher by 1mm than the upper surface of the sponge.
Necessary amount of oil is approximately 500 cc.

(Oil may overflow from the oil reservoir when it is poured at a time. So be careful.)

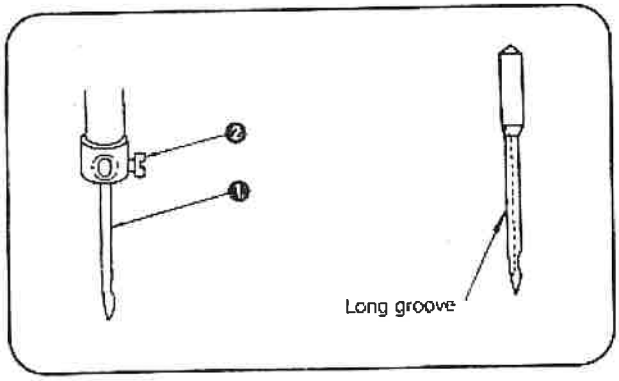


4) Adjustment of the amount of oil in the hook is performed with oil amount adjustment screw ❸ after loosening nut ❹. Turning the oil amount adjustment screw clockwise Ⓐ will increase the amount of oil in the hook, or counterclockwise Ⓑ will desrease it.

5) The appropriate amount of oil, when a sheet of paper is placed near the periphery of the hook, is to such an extent that splashes of oil from the hook appear in approximately five seconds as shown in the figure on the left.

6、ATTACHING THE NEEDLE

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



1) Turn the handwheel to bring the needle bar to the highest position of its stroke.

2) Loosen needle clamp screw ❷, and hold needle ❶ so that the long groove in the needle is facing exactly to the left.

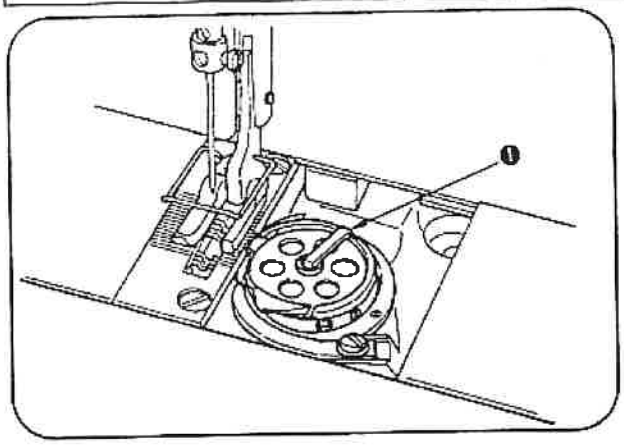
3) Push needle ❶ deep into the needle clamp hole until it will go no further.

4) Tighten needle clamp screw ❷ firmly.

(Caution) When replacing the needle, check the clearance provided between the needle and the blade point of hook. (Refer to "17. NEEDLE-TO-HOOK RELATION" AND "18. ADJUSTING THE HOOK NEEDLE GUARD".)
If there is no clearance, the needle and the hook will be damaged.

7、ATTACHING AND REMOVING THE BOBBIN

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



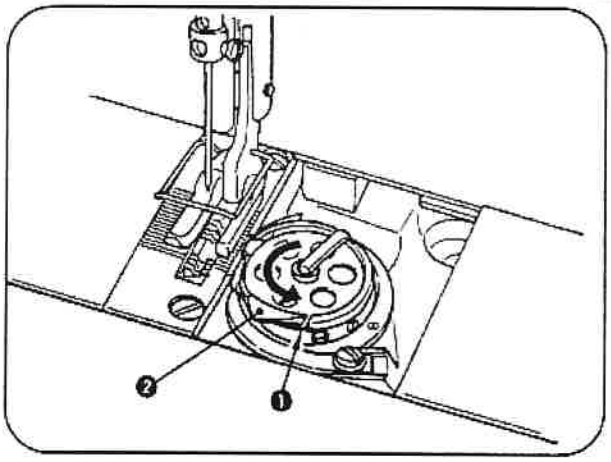
1) Lift latch ❶ of hook, and take out the bobbin.

2) Put the bobbin into the shaft in the hook correctly and release the latch.

(Caution) Do not make the machine run idle with the bobbin (bobbin thread). The bobbin thread is caught in the hook. As a result, the hook may be damaged.

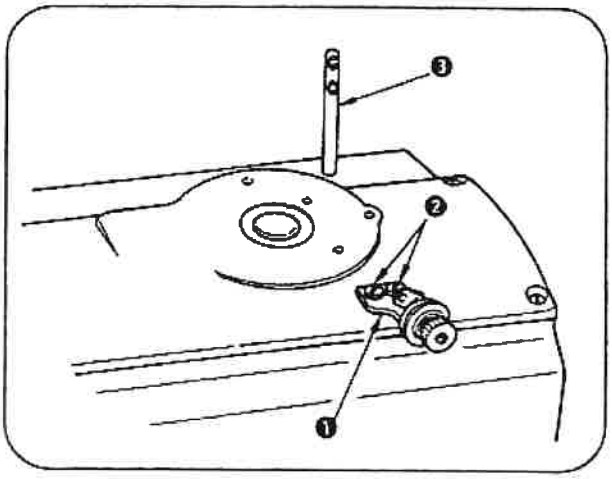
8、THREADING THE HOOK

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



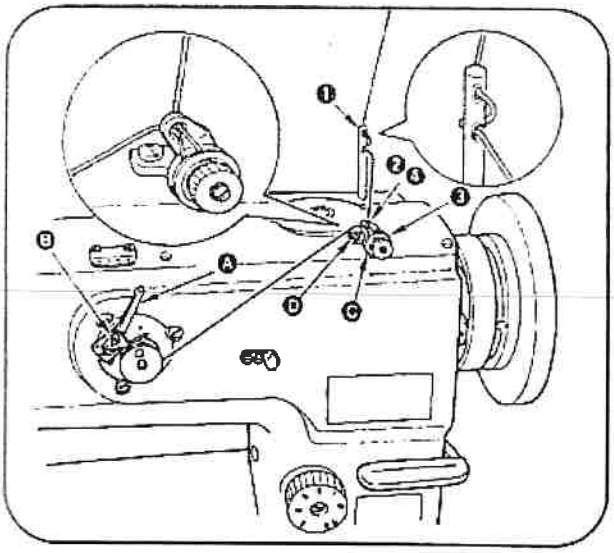
1) Pass the thread through thread path ❶ in the inner hook and the tension spring after passing it under protrusion ❷.
2) Make sure that the bobbin revolves in the direction of the arrow when you draw the thread.

9、INSTALLING THE BOBBIN WINDER THREAD GUIDE



1) Attach bobbin winder thread guide ❶ to the top cover with setscrew ❷.
2) Adjust the position of the thread guide referring to "10. WINDING A BOBBIN".
3) Strike bobbin thread guide rod ❸ into the machine arm.

10、WINDING A BOBBIN/BEWICKELN EINER SPULF

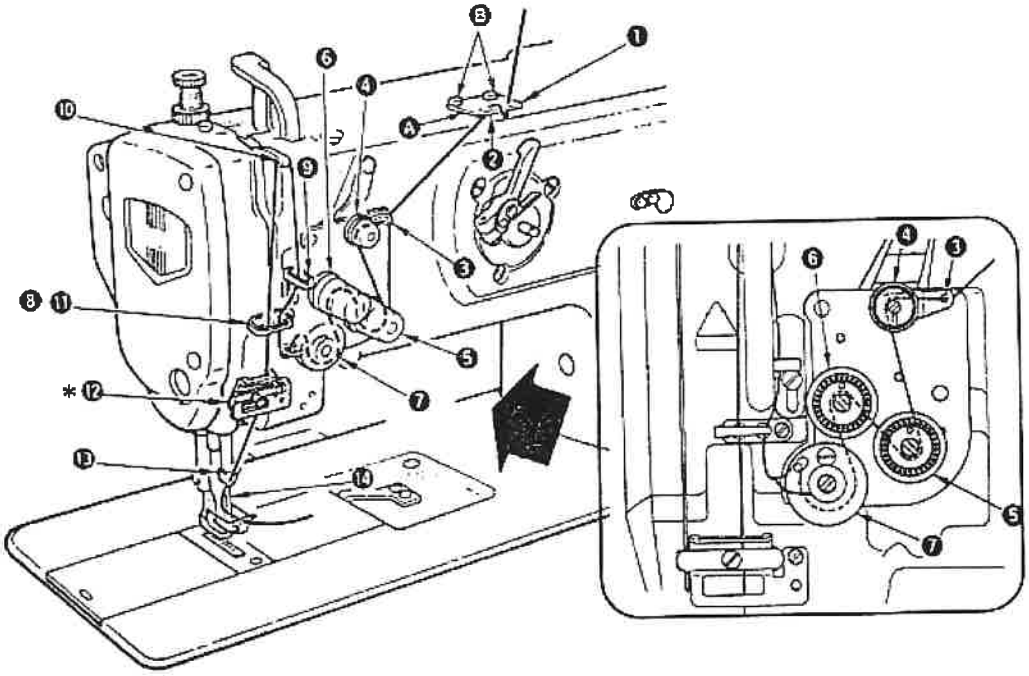


1) Pass the thread in the order of ❶, through ❹. Then, wind it several turns round the bobbin.
2) Tilt bobbin winder lever Ⓐ.
3) Loosen setscrew Ⓑ and adjust the position of the adjusting plate to wind a bobbin about 80% of its capacity.
4) If the bobbin is wound unevenly, correct it by moving bobbin winder thread guide Ⓒ back or forth. Then, tighten setscrews Ⓓ.
5) When the bobbin is filled up, the bobbin winder lever automatically releases the bobbin and the bobbin winder stops running.

11、THREADING THE MACHINE HEAD

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.

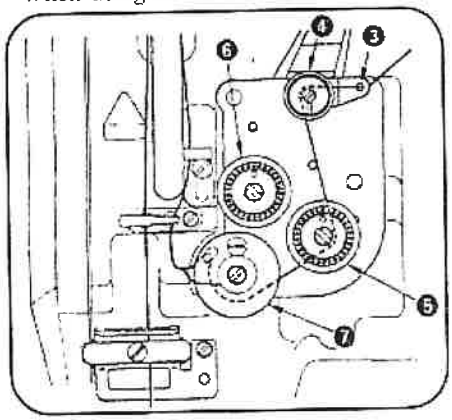
1508N



1. Attach arm thread guide Ⓐ to the top cover with setscrew Ⓑ.
2. Thread the machine head following the order of ❶ through ⓮ as shown in the illustration given above.

* Pass thread through the right side of thread guide ⓬.

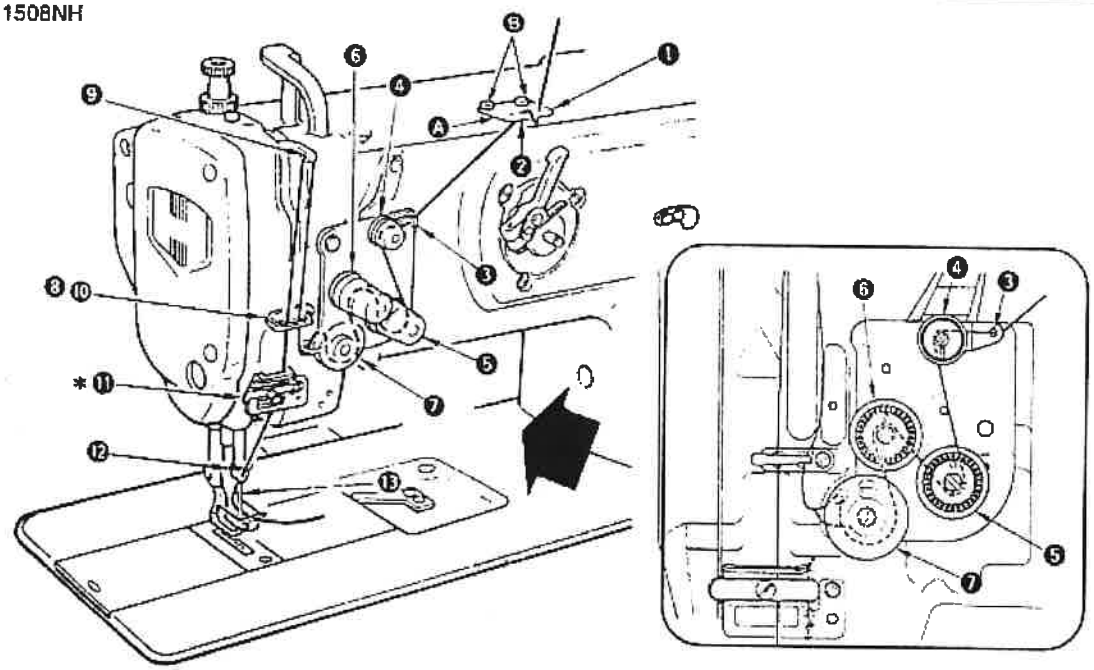
When using thin thread



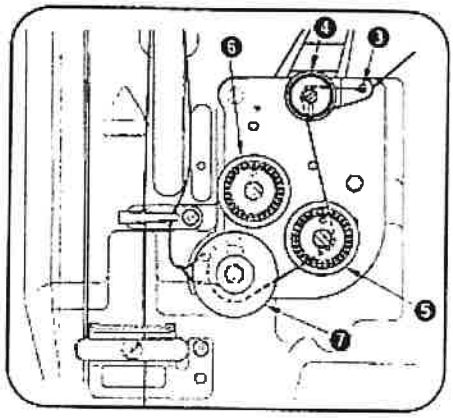
(Caution)

When using thin needle thread (when needle thread is passed through both of the thread tension disk No. 2, necessary tension cannot be applied and the disks play), do not pass the thread through ❻ and pass it in the order of ❺ to ❼.

1508NH



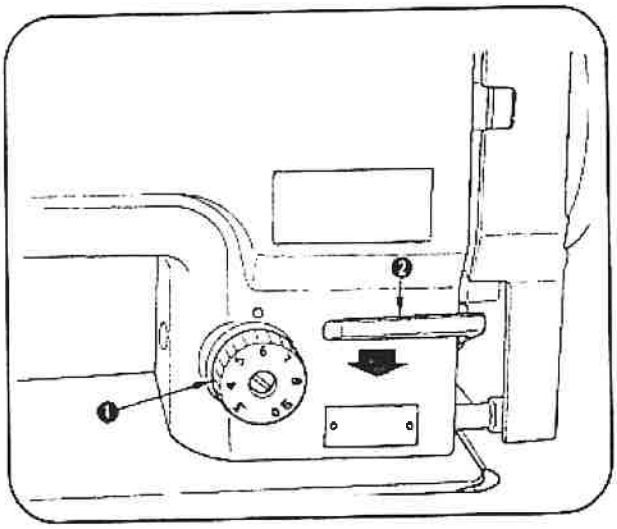
When using thin thread



(Caution)

When using thin needle thread (when needle thread is passed through both of the thread tension disk No. 2, necessary tension cannot be applied and the disks play), do not pass the thread through ❻ and pass it in the order of ❺ to ❼.

12、ADJUSTING THE STITCH LENGTH



Turn stitch dial ❶ counterclockwise (clockwise) so that the number corresponding to the de sired stitch length is brought to the top until the marking spot is reached.

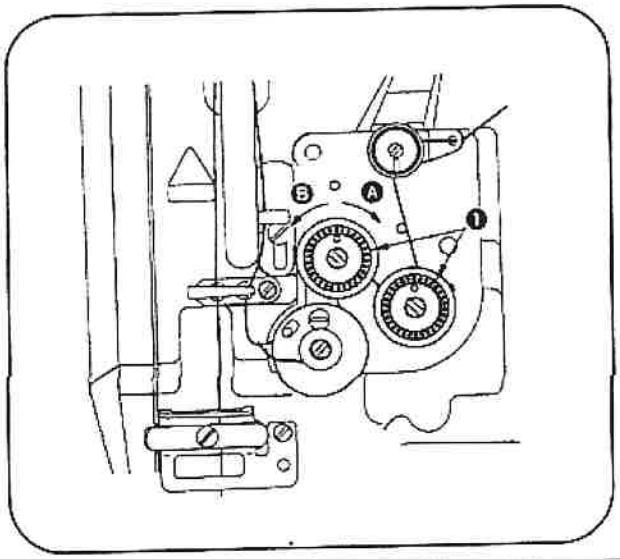
(1 Reverse feed stitching

1) Press down reverse feed control lever ❷.

2) Reverse feed stitches are made as long as you keep pressing the lever down.

3) Release the lever, and the machine will run in the normal feed direction.

13、THREAD TENSION



(1) Adjusting the needle thread tension

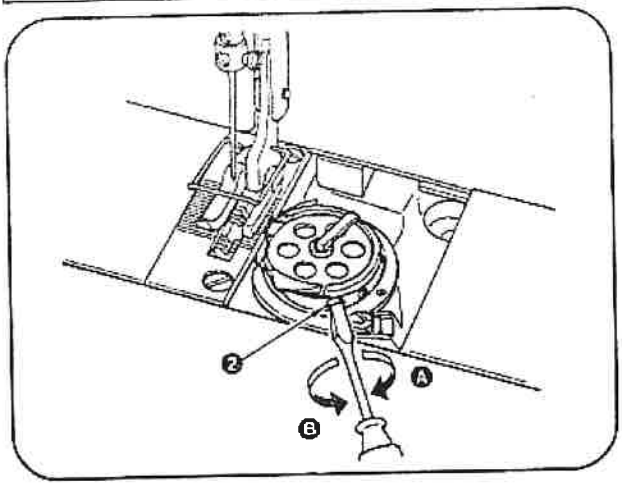
1) Turn thread tension nut No. 2 ❶ clockwise Ⓐ to increase the needle thread tension, or counterclockwise Ⓑ to decrease it.

(Caution)

Apply the same tension to both of the thread tension nut No. 2.

WARNING:

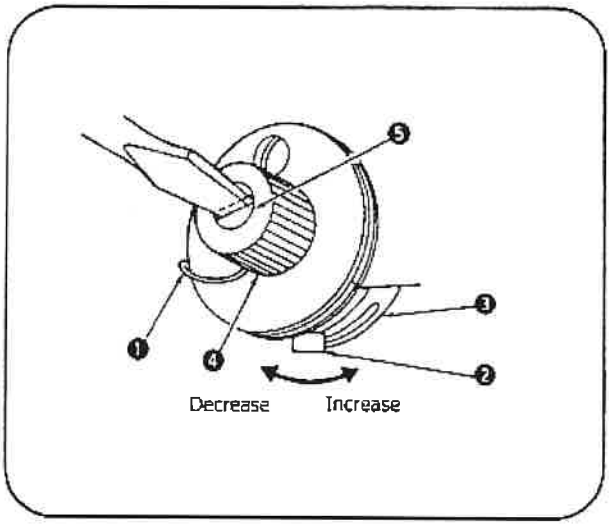
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



(2) Adjusting the bobbin thread tension

Turn tension adjustment screw ❷ clockwise Ⓐ to increase the bobbin thread tension, or counterclockwise Ⓑ to decrease it.

14、THREAD TAKE – UP SPRING

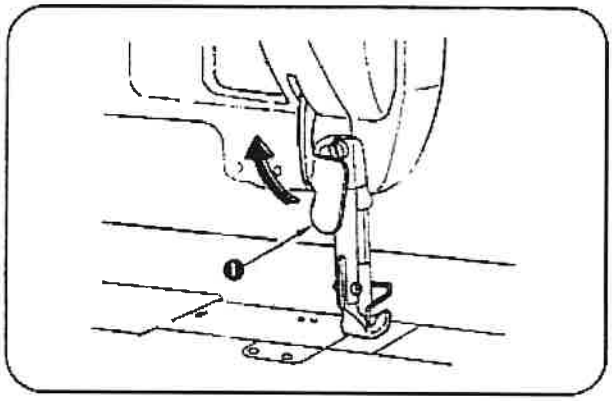


(1)When you want to change the stroke of the spring:

1)Loosen screw ❷ in the stopper and move stopper ❸ to the right or left to change the stroke of thread take – up spring ❶.

2) Move the stopper to the right to increase the stroke of the thread take – up spring , or the left to decrease it.

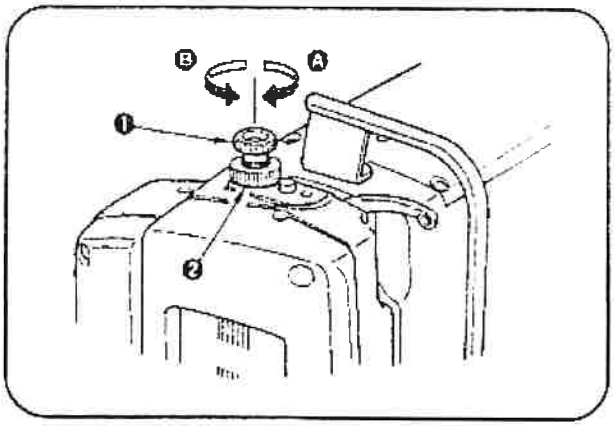
15、HAND LIFTER



1) When you want to keep the presser foot in the lifted position, lift hand lifter ❶ in the direction of the awor. This makes the presser foot rise 9 mm and stay at that position.

2) To make the presser foot come down to its home position, lower the hand lifter.

16、ADJUSTING THE PRESSURE OF THE PRESSER FOOT



1) Turn presser spring regulating dial ❶ clockwise Ⓐ to increase the pressure of the presser foot, or counterclockwise Ⓑ to decrease it.

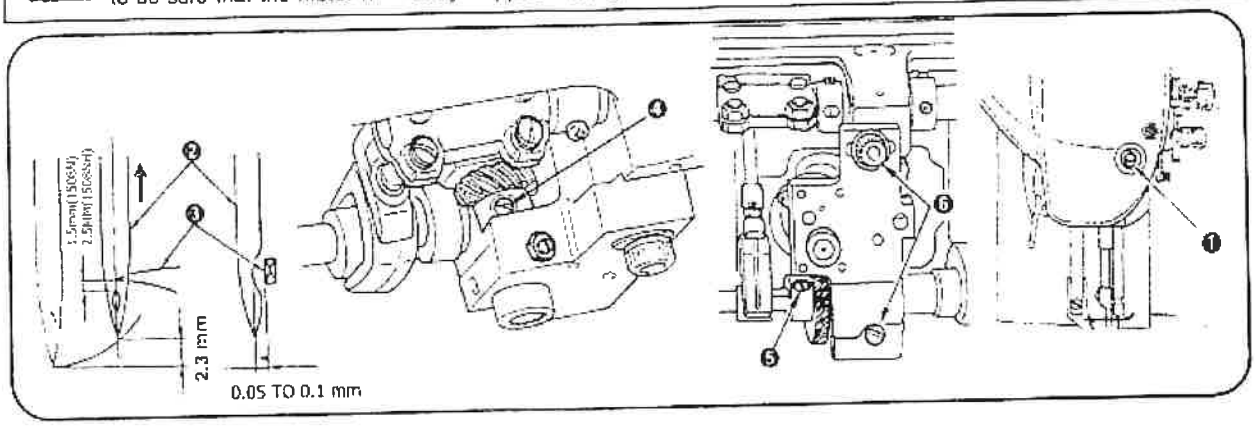
After the adjustment, tighten nut ❷.

(Note)

Be sure to operate the sewing machine with the pressure of the presser foot minimized as long as the presser foot securely holds the material.

17、NEEDLE – TO – HOOK RELATION

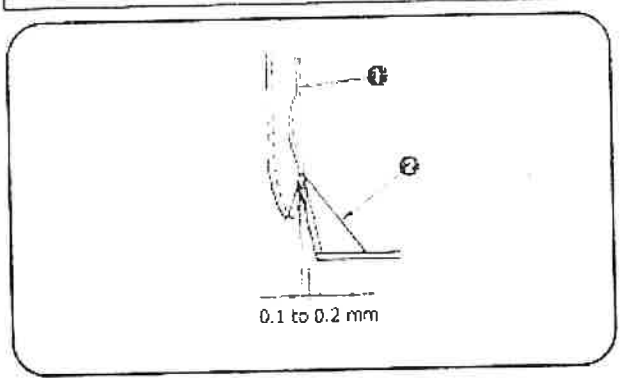
WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



1) Set the stitch dial to 0(zero).
2) Turn the handwheel and loosen screw ❶ in the needle bar bracket to adjust so that the distance from the upper end of needle eyelet of needle ❷ to blade point ❸ of the hook is 1.5 mm(1508N), or 2.5 mm(1508NH) when the needle bar is raised by 2.3 mm from the lowest position of its stroke. Then, tighten the screw again.
3) Turn the handwheel to make the needle bar ascend by 2.3 mm from the lowest position of its stroke. Tighten two setscrews ❹ in the screw gear (small) so that blade point ❸ of the hook is almost aligned with the center of needle ❷. However, fit one setscrew having a V – shaped top end of two setscrews ❷ to the V – groove on the hook driving shaft and tighten it.
4) Loosen setscrews ❻ in the hook driving shaft saddle and move the hook driving shaft saddle to the right or left until a clearance of 0.05 to 0.1 mm is provided between the blade point of the hook and the needle at the position where blade point ❸ of the hook is almost aligned with the center of needle ❷.
After the adjustment, tighten setscrews ❻.
5) Loosen two setscrews ❺ in the screw gear (large) and move the screw gear(large) to the right or left until blade point ❸ of the hook is aligned with the center of needle ❷.
After the adjustment, tighten setscrews ❺. However, fit the setscrew No. 1 of two setscrews ❺ to the flat section of the hook driving shaft and tighten it.

18、ADJUSTING THE HOOK NEEDLE GUARD

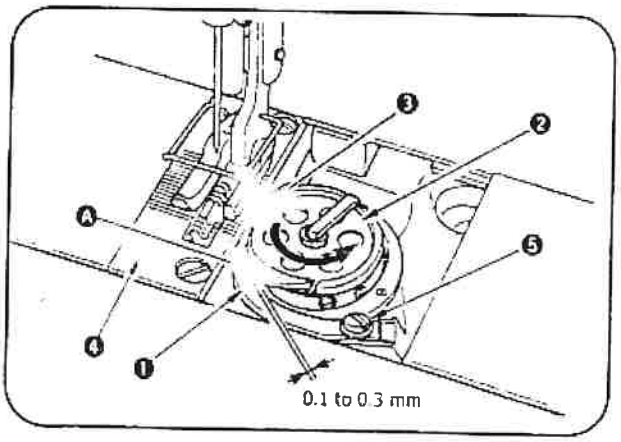
WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



When a hook has been replaced, be sure to check the position of the hook needle guard.
As the standard position of the hook needle guard, hook needle guard ❷ must push the side face of needle ❶ to lean the needle by 0.1 to 0.2 mm away from its straight position.
If not, adjust the hook needle guard by bending it.
1) To bend the hook needle guard inward, apply a screwdriver to the outside of the hook needle guard.
2) To bend the hook needle guard outward, apply a screwdriver to the inside of the hook needle guard.

19、ADJUSTING THE BOBBIN CASE OPENING LEVER

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



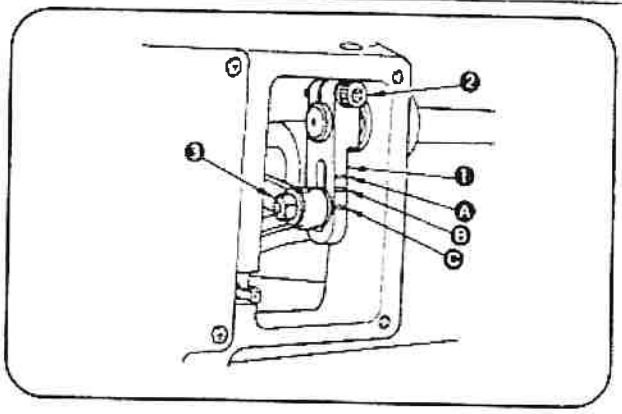
1)Turn the handwheel in its normal rotational direction to bring bobbin case opening lever ❶ to its back end position.

2) Turn bobbin case ❷ in the direction of the arrow until bobbin case stopper ❸ rests in the groove in throat plate ❹.

3) Loosen screw ❺ in the bobbin case opening lever and adjust so that a clearance of 0.1 to 0.3 mm is provided between the bobbin case opening lever and protruding section Ⓐ of the bobbin case.

20、ADJUSTING THE LIFTING AMOUNT OF THE PRESSER FOOT AND THE WALKING FOOT

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



Standard of the amount of alternate vertical movement	
Engraved marker line Ⓐ	Aporox. 5mm
Engraved marker line Ⓑ	Aporox. 4mm
Engraved marker line Ⓒ	Aporox. 3mm

The amount of alternate vertical movement of the presser foot and the walking foot is normally equal. To increase the amount of alternate vertical movement, move upper feed arm ❶ upward in the range of the slot.
To decrease it, move the upper feed arm downward. Then, tighten the nut ❸.
To change the lifting amount of the presser foot and that of the walking foot, loosen screw ❷ in the upper feed arm, turn the handwheel to this side and tighten screw ❷ when the bottom faces of the presser foot and the walking foot are flush at the top surface of the throat plate.
Then, the lifting amount of the presser foot becomes more than that of the walking foot. Or, turn the handwheel in the reverse direction to increase the lifting amount of the walking foot more than that of the presser foot.
You will find upper feed arm ❷ when removing the right side of the window plate.

21、SEWING SPEED TABLE

The maximum sewing speed has been specified in accordance with sewing conditions as shown in the table below.
Set the maximum sewing speed appropriately in accordance with the sewing conditions given taking care not to exceed the corresponding specified value.

1508N

Amount of alternate vertical movement of the walking foot and presser foot	Stitch length: 6 mm or less	Stitch length: More than 6 mm and 9 mm or less
Less than 3 mm	2500 rpm	2000 rpm
3 mm to less than 4 mm	2000 rpm	2000 rpm
4 mm to less than 6.5 mm	1600 rpm	1600 rpm

1508NH

Amount of alternate vertical movement of the walking foot and presser foot	Stitch length: 6 mm or less	Stitch length: More than 6 mm and 10 mm or less
Less than 4 mm	2000 rpm	1600 rpm
4 mm to less than 6.5 mm	1600 rpm	1600 rpm

22、MOTOR PULLEY AND V BELT

Use an M type V belt.

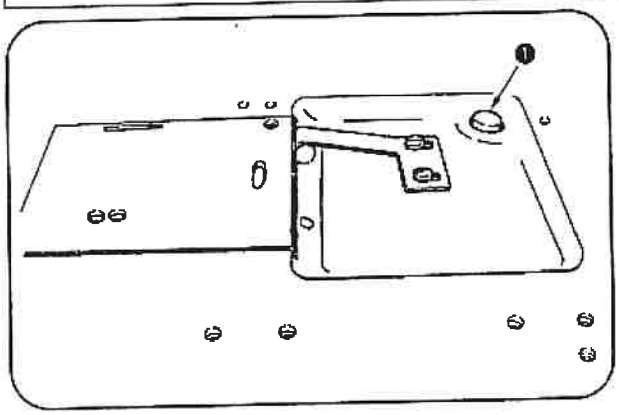
The following table shows the relationship among the motor pulley, belt length and the rotational speed of the sewing machine.

Model	Rotational speed of sewing machine	Effective diameter of handwheel	Number of poles	Frequency	Rotational speed of motor	Effective diameter of motor pulley	Size of V belt
1508N	2500 rpm	ϕ93. 3mm	2	50Hz	2840rpm	ϕ 80	M 44
				60Hz	3400 rpm	ϕ 65	M 43
			4	50Hz	1430 rpm	ϕ 160	M 47
				60Hz	1715 rpm	ϕ 135	M 46
1508NH	2000 rpm	ϕ93. 3mm	2	50Hz	2840rpm	ϕ65	M 43
				60Hz	3400 rpm	ϕ55	M 42
			4	50Hz	1430 rpm	ϕ 130	M 46
				60Hz	1715 rpm	ϕ 110	M 45

For the motor, use a 2P or 4P clutch motor of 3 – phase 400W(1/2 HP)

23、RESETTING THE SAFETY CLUTCH

WARNING:
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



The safety clutch functions when an excessive load is applied to the hook or the other components during sewing. At this time, the hook will never rotate even if turning the handwheel. When the safety clutch has functioned, remove the cause and reset the safety clutch as given in the following procedure.

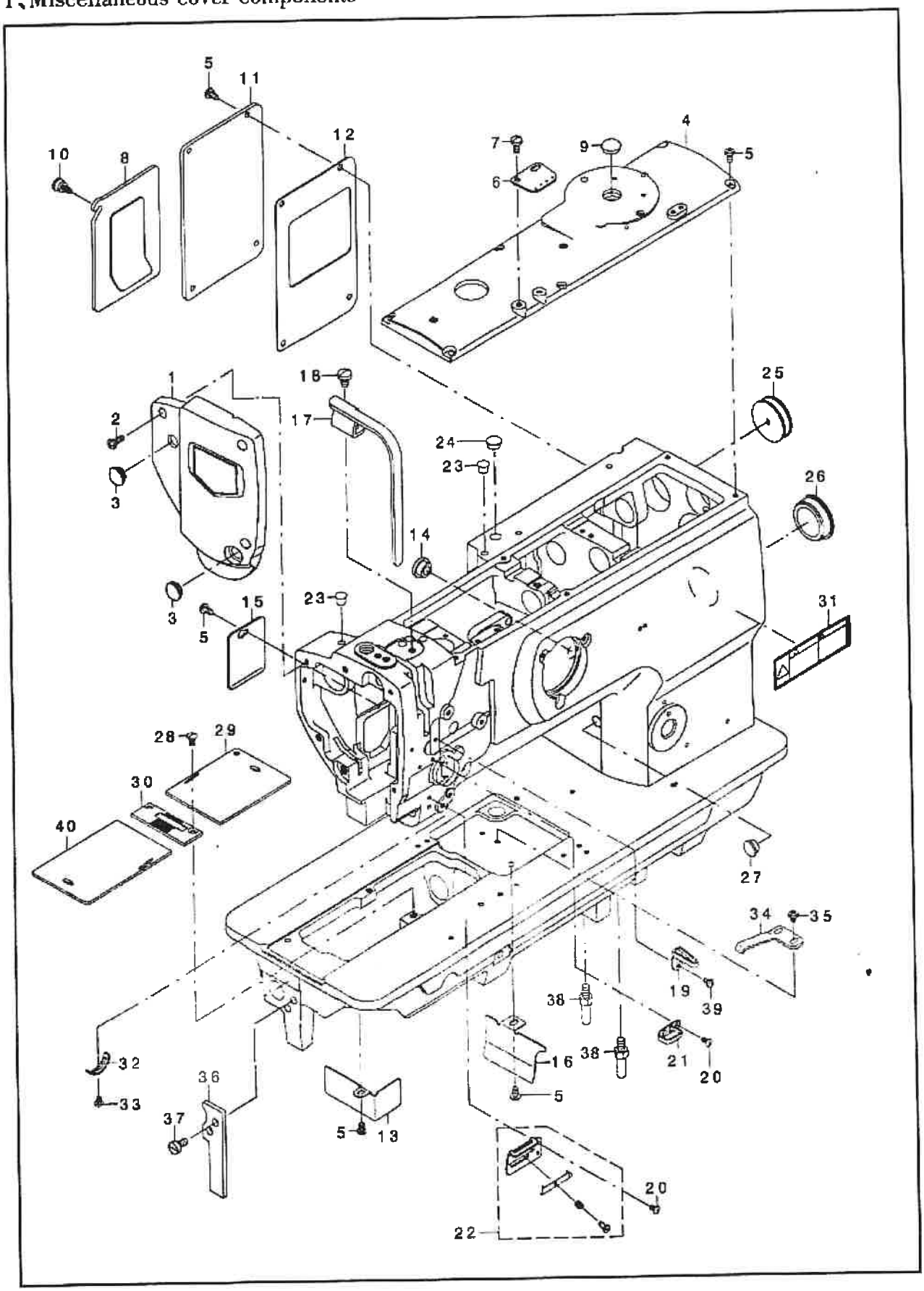
1) Pressing push button ❶ located on the top surface of the machine bed, strongly turn the handwheel in the reverse direction of rotation.

2)The resetting procedure completes when the handwheel clicks.

24、TROUBLES IN SEWING AND CORRECTIVE MEASURES

Troubles	Causes	Corrective measures
1.Thread breakage (Thread frays or is worn out.	① Thread path, needle point, hook blade point or bin case resting groove on the throat plate has sharp edges or burrs.	○ Remove the sharp edges or burrs on the blade point of hook using a fine emery paper. Buff up the bobbin case resting groove on the throat plate.
	② Needle thread tension is too high.	○ Decrease the needle thread tension.
	③ Bobbin case opening lever provides an excessive clearance at the bobbin case.	○ Decrease the clearance provided between the bobbin case opening lever and the bobbin. Refer to "19. ADJUSTING THE BOBBIN CASE OPENING LEVER."
	④ Needle comes in contact with the blade point of hook.	○ Refer to "17. NEEDLE – TO – HOOK RELATION."
	⑤ Amount of oil in the hook is too small.	○ Adjust the amount of oil in the hook properly. Refer to "5. LUBRICATION".
(Needle thread trails 2 to 3cm from the wrong side of the fabric)	⑥ Needle thread tension is too low.	○ Increase the needle thread tension.
	⑦ Thread take – up spring works excessively or the stroke of the spring is too small.	○ Decrease the tension of the spring and increase the stroke of the spring.
	⑧ Timing between the needle and the hook is excessively advanced or retarded.	○ Refer to "17. NEEDLE – TO – HOOK RELATION."
2.Stitch skipping	① Timing between the needle and the hook is excessively advanced or retarded.	○ Refer to "17. NEEDLE – TO – HOOK RELATION."
	② Pressure of the presser foot is too low.	○ Tighten the presser spring regulator.
	③ The clearance provided between the top end of the needle eyelet and the blade point of hook is not correct.	○ Refer to "17. NEEDLE – TO – HOOK RELATION."
	④ Hook needle guard is not functional.	○ Refer to "18. ADJUSTING THE HOOK NEEDLE GUARD."
	⑤ Improper type of needle is used.	○ Replace the needle with one which is thicker than the current needle by one count.
3.Loose stitches	1 Bobbin thread does not pass through the tension spring of the inner hook.	○ Thread the bobbin thread correctly.
	2 Thread path has been poorly finished.	○ Remove rough parts with a fine emery paper or buff it up.
	3 Bobbin fails to move smoothly.	○ Replace the bobbin or hook with a new one.
	4 Bobbin case opening lever provides too much clearance at the bobbin.	○ Refer to "19. ADJUSTING THE BOBBIN CASE OPENING LEVER."
	⑤ Bobbin thread tension is too low.	○ Increase the bobbin thread tension.
	⑥ Bobbin has been wound too tightly.	○ Decrease the tension applied to the bobbin winder.

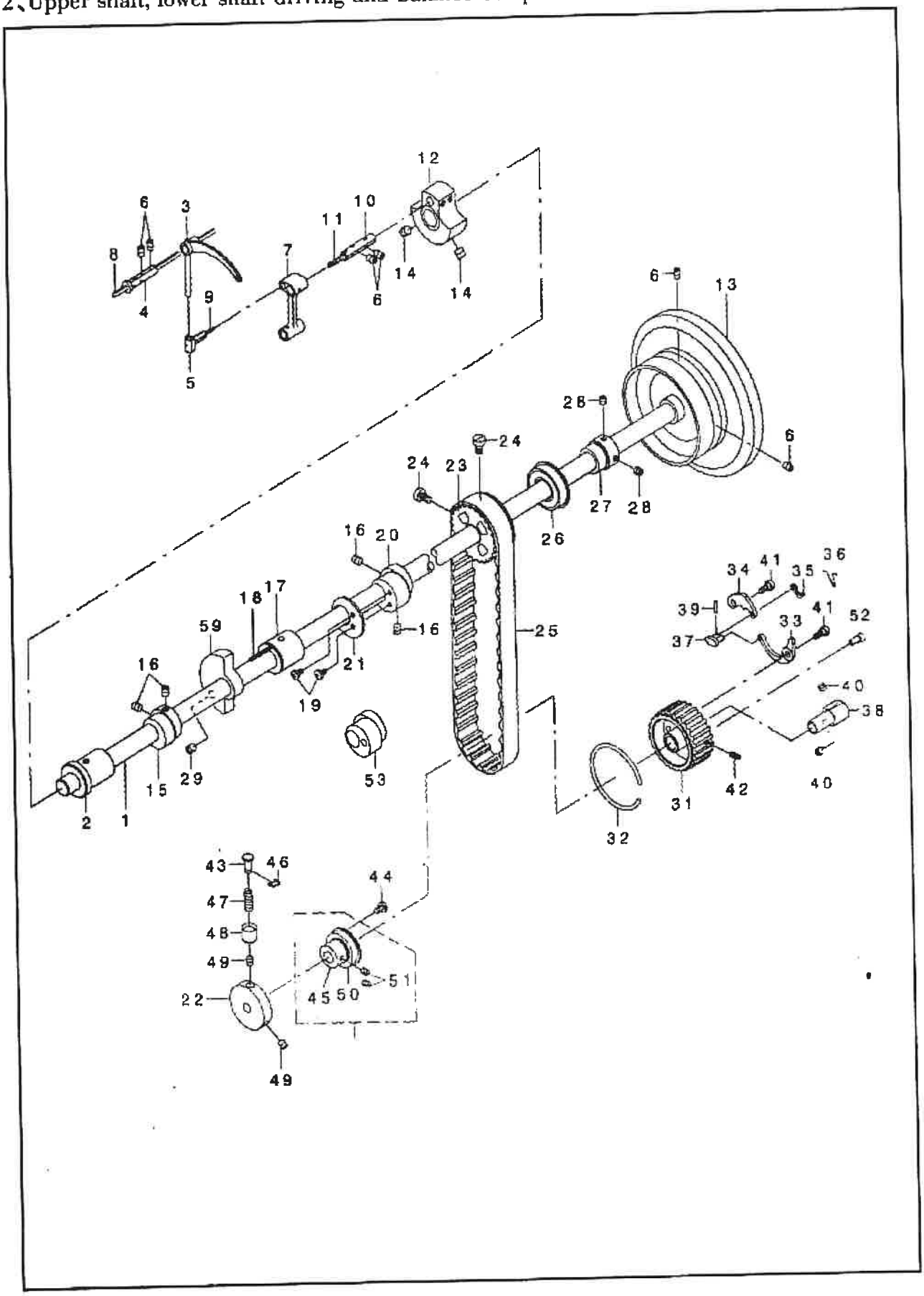
1、Miscellaneous cover components



1、Miscellaneous cover components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	23 - 010	FACE PLATE ASM.	1	
2	23 - 010_	SCREW	3	SM11/64" × 40 L = 12
3	23 - 0103	RUBBER PLUG	2	
4	23 - 010	TOP COVER B	1	
5	23 - 0105	SCREW	13	SM11/64" × 40 L = 8
6	23 - 0106	ARM THREAD GUIDE	1	
7	23 - 010	SCREW	2	SM3/16" × 32 L = 9.5
8	23 - 0108	WINDOW PLATE A ASM.	1	
9	23 - 0109	RUBBER PLUG	1	
10	23 - 0111	SCREW	1	SM11/64" × 40 L = 7.5
11	23 - 011	WINDOW P TL B	1	
12	23 - 0113	WINDOW PLATE PACKING B	1	
13	23 - 0151	OIL SHIELD(LEFT)	1	
14	23 - 0115	RUBBER PLUG	2	
15	23 - 0116	SIDE COVER	1	
16	23 - 0152	OIL SHIELD(RIGHT)	1	
17	23 - 0118	BALANCE COVER	1	
18	23 - 0119	SCREW	1	SM15/64" × 28 L = 9
19	23 - 0120	THREAD GUIDE	1	
20	23 - 0123	SCREW	5	SM9/64" × 40 L = 5.6
21	23 - 0122	FRAME THREAD GUIDE, UPPER	1	
22	23 - 0124	THREAD GUIDE ASM.	1	
23	23 - 0148	RUBBER PLUG	2	
24	23 - 0164	RUBBER PLUG	1	
25	23 - 0158	RUBBER PLUG	1	
26	23 - 0157	RUBBER PLUG	1	
27	23 - 0146	RUBBER PLUG	1	SM9/64" × 40 L = 6
28	23 - 0137	SCREW	2	SM11/64" × 40 L = 7
29	25 - 0139	SLIDING PLATE(RIGHT)	1	
30	25 - 0136	THROAT PLATE	1	
31	23 - 0139	SAFETY LABEL	1	
32	23 - 0132	TAKE - UP SPRING ADJUSTING PLATE	1	
33	23 - 0133	SCREW	1	SM3/16" × 32 L = 4.5
34	23 - 0134	BED SLIDE SPRING	1	
35	23 - 0135	SCREW	2	SM11/64" × 40 L = 5
36	23 - 0163	BED SUPPORT PLATE	1	
37	23 - 0172	SCREW	2	SM15/64" × 28 L = 12
38	23 - 0162	BED SCREW STUD	1	
39	23 - 0121	SCREW	2	SM9/64" × 40 L = 6
40	25 - 0138	SLIDING PLATE(LEFT)	1	

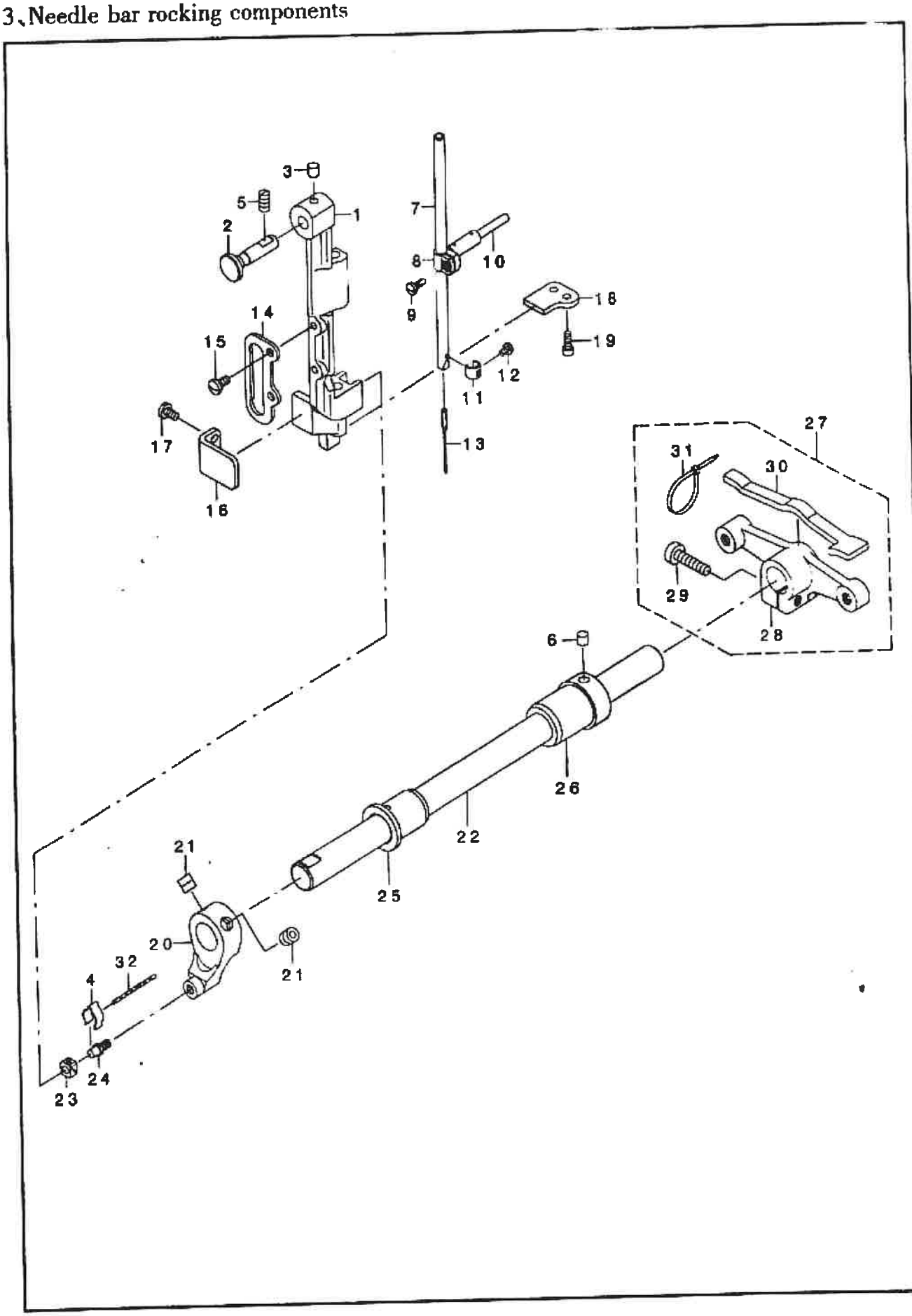
2、Upper shaft, lower shaft driving and balance components



2、Upper shaft, lower shaft driving and balance components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	23 – 0201	UPPER SHAFT	1	
2	23 – 0202	UPPER SHAFTFRONT METAL	1	
3	25 – 0203	THREAD TAKE – UP LEVER ASM.	1	
4	23 – 0204	TAKE – UP LEVER PIN	1	
5	25 – 0206	TAKE – UP LEVER THRUST PIN	1	
6	23 – 0206	SCREW	6	SM15/64" × 28 L = 8
7	23 – 0207	NEEDLE BAR CRANK ROD	1	
8	23 – 0208	OIL WICK	1	
9	23 – 0209	OIL WICK	1	
10	23 – 0210	NEEDLE BAR CRANK PIN	1	
11	23 – 0211	OIL WICK	1	
12	25 – 0257	COUNTER WEIGHT	1	
13	25 – 0258	FLYWHEEL	1	
14	23 – 0214	SCREW	2	M8 × 8
15	23 – 0215	UPPER FEED CAM	1	
16	23 – 0216	SCREW	4	SM1/4" × 40 L = 8
17	23 – 0217	UPPER SHAFT INNER METAL	1	
18	23 – 0218	OIL WICK	1	
19	23 – 0257	SCREW	2	SM11/64" × 40 L = 7
20	23 – 0220	ECCENTRIC CAM A	1	
21	23 – 0221	HORIZONTAL FEED CAM COVER	1	
22	23 – 0222	SAFETY CLUTCH DISC	1	
23	23 – 0223	UPPER SPROCKET	1	
24	23 – 0224	SCREW	2	SM1/4" × 40 L = 11
25	23 – 0225	TIMING BELT	1	
26	23 – 0226	BUSHING, REAR	1	
27	23 – 0227	UPPER SHAFT BEARING HOOK	1	
28	23 – 0228	SCREW	2	M6 × 6
29	23 – 0259	SCREW	2	SM15/64" × 28 L = 15
30	23 – 0258	BALANCER	1	
31	23 – 0231	LOWER SPROCKET	1	
32	23 – 0232	SPROCKET RING	1	
33	23 – 0233	SAFETY CLUTCH SPRING	1	
34	23 – 0234	SAFETY CLUTCH HOOK	1	
35	23 – 0235	SAFETY CLUTCH COUNTER – HOOK	1	
36	23 – 0236	COUNTER – HOOK SPRING	1	
37	23 – 0237	SAFETY CLUTCH SMALL LINK	1	
38	23 – 0238	SAFTY BASE	1	
39	23 – 0239	SAFETY CLUTCH SMALL LINK PIN	1	
40	23 – 0408	SCREW	2	SM1/4" × 40 L = 6
41	23 – 0241	HINGE SCREW	2	SM3/16" × 32 Φ6.35 H = 3.2
42	23 – 0243	SCREW	1	SM11/64" × 40 L = 9.5
43	23 – 0244	SAFETY CLUTCH PUSH BUTTON	1	
44	23 – 0255	SCREW	2	SM3/16" × 28 L = 8
45	23 – 0252	THRUST COLLAR ASM., B	1	
46	23 – 0246	E – RING	1	
47	23 – 0247	SPRING	1	
48	23 – 0248	SAFETY CLUTCH KNOB SLEEVE	1	
49	23 – 0249	SCREW	2	SM15/64" × 28 L = 7
50	23 – 0254	BEARING 20 × 42	1	
51	23 – 0252	SCREW	2	SM1/4" × 40 L = 10
52	23 – 0269	ADJUSTING PIN	1	
53	25 – 0223	TRIANGULAR CAM	1	

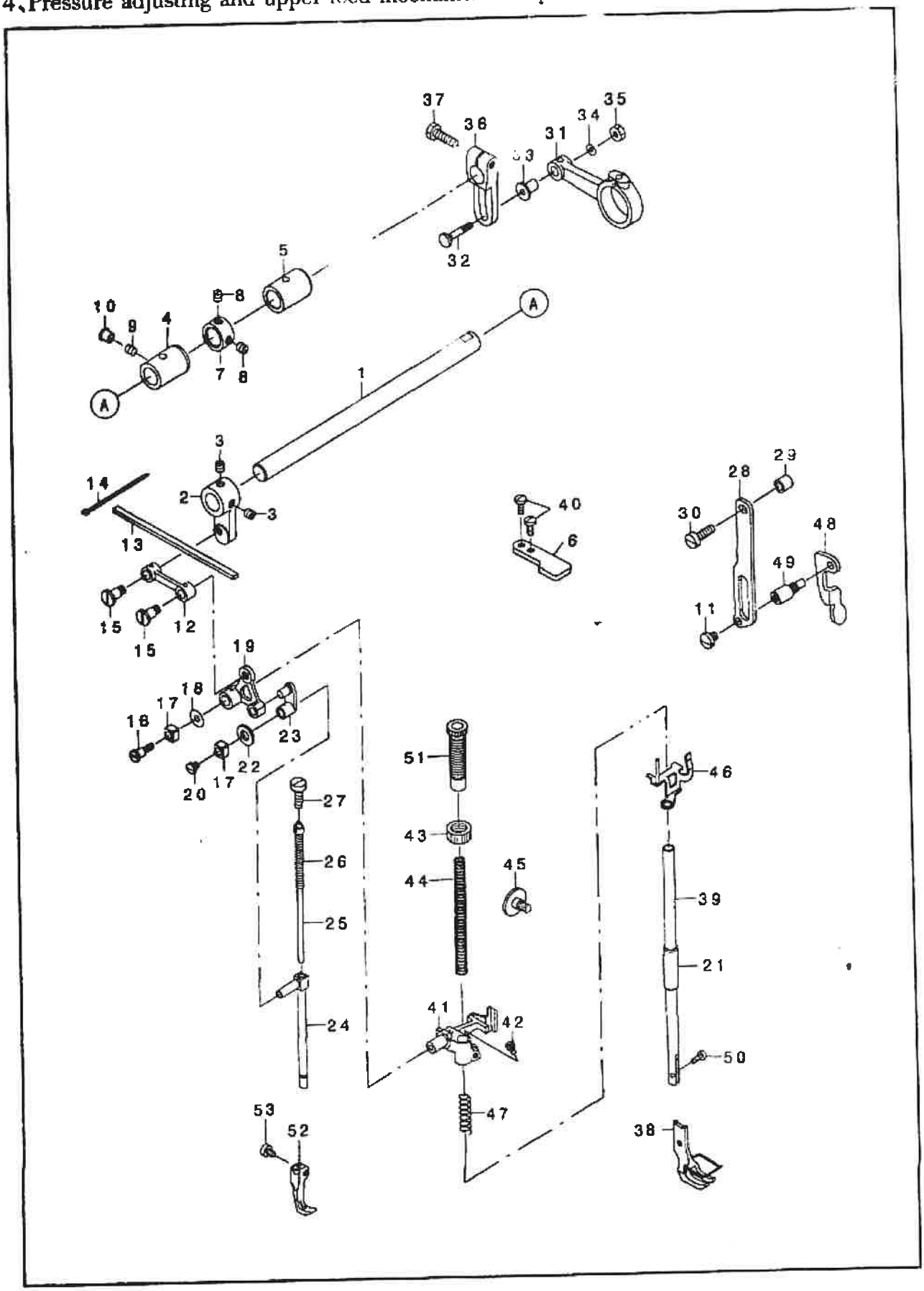
3、Needle bar rocking components



3、Needle bar rocking components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	26 – 0301	NEEDLE BAR FRAME	1	
2	23 – 0302	HINGE STUD	1	
3	23 – 0303	FELT	1	
4	23 – 0304	OIL WICK RETAINER	1	
5	23 – 0305	SCREW	1	SM15/64" × 28 L = 10. 5
6	23 – 0106	FELT	1	
7	26 – 0307	NEEDLE BAR	1	
8	25 – 0308	NEEDLE BAR CONNECTION	1	
9	23 – 0309	SCREW	1	SM9/64" × 40 L = 8
10	23 – 0310	FELT	1	
11	25 – 0311	THREAD GUARD	1	
12	25 – 0312	SCREW	1	SM1/8" × 44 L = 4. 5
13		NEEDLE 190R 160	2	190R #160
14	23 – 0314	UPPER FEED BAR GUIDE	1	
15	23 – 0315	SCREW	2	SM11/64" × 40 L = 8
16	23 – 0316	ROCKING BASE GUIDE	1	
17	23 – 0317	SCREW	2	SM11/64" × 40 L = 7. 5
18	23 – 0318	ROCKING BASE GUIDE	1	
19	23 – 0319	SCREW	2	SM9/64" × 40 L = 10
20	23 – 0320	ROCKING FRONT ARM	1	
21	23 – 0321	SCREW	2	M8 × 8
22	23 – 0322	ROCKING SHAFT	1	
23	23 – 0323	SQUARE BLOCK	1	
24	23 – 0324	STUD	1	
25	23 – 0325	ROCKING SHAFT FRONT METAL	1	
26	23 – 0326	ROCKING SHAFT REAR METAL	1	
27	23 – 0327	ROCKING REAR ARM ASM.	1	
28	23 – 0328	ROCKING REAR ARM	1	
29	23 – 0329	SCREW	1	SM15/64" × 28 L = 24
30	23 – 0330	ROCKING REAR ARM FELT	1	
31	23 – 0331	CABLE BAND	1	
32	23 – 0332	OIL WICK	1	

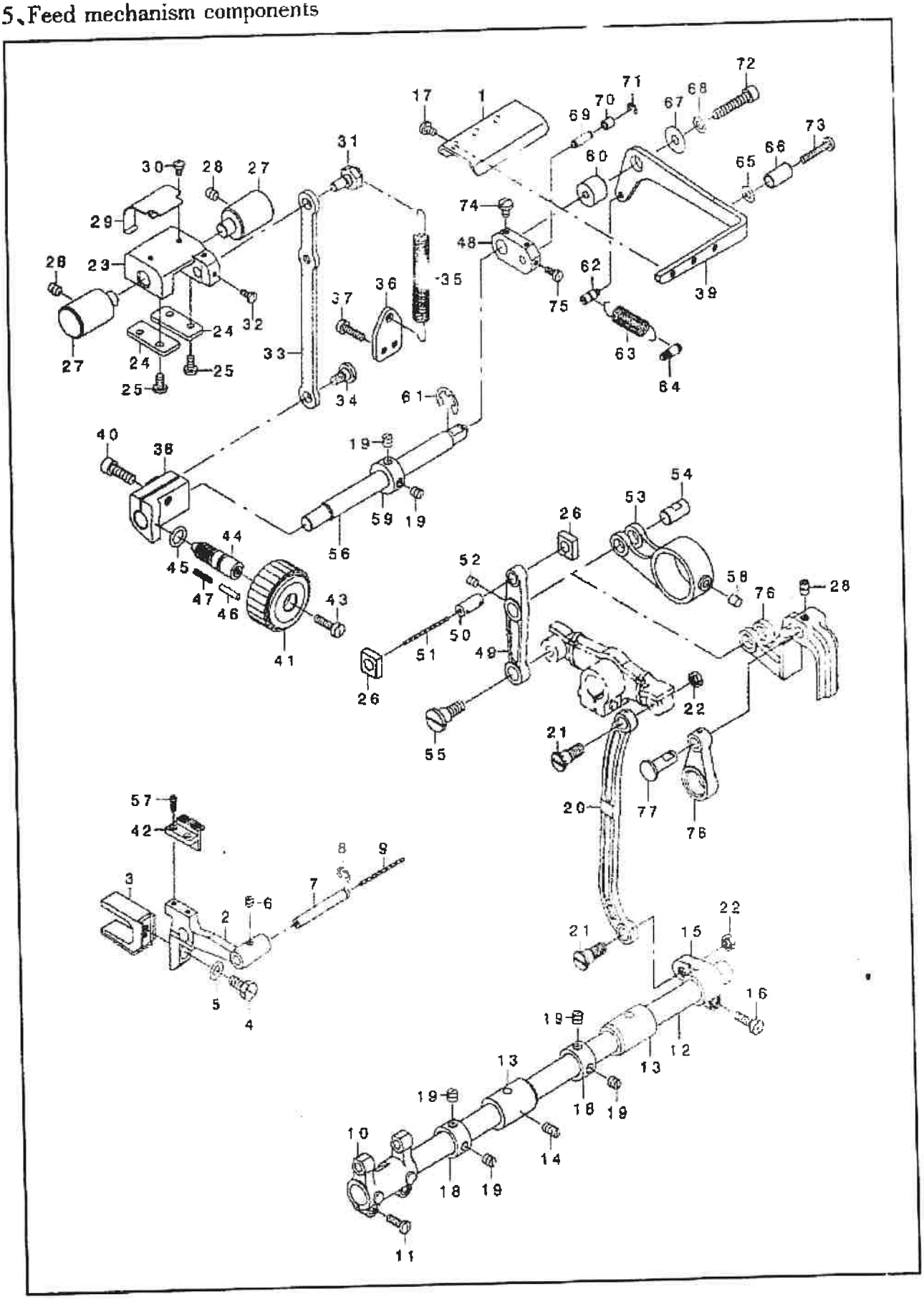
4、Pressure adjusting and upper feed mechanism component



4、Pressure adjusting and upper feed mechanism components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	23 – 0401	UPPER FEED SHAFT	1	
2	23 – 0402	UPPER FEED FRONT ARM	1	
3	23 – 0403	SCREW	2	SM1/4" × 40 L = 6
4	23 – 0404	FRONT METAL	1	
5	23 – 0405	FEED SHAFT METAL	1	
6	23 – 0473	UPPER FEED STOPPER PLATE(B)	1	
7	23 – 0407	MAIN SHAFT THRUST COLLAR	1	
8	23 – 0408	SCREW	2	SM1/4" × 40 L = 6
9	23 – 0249	SCREW	1	SM15/64" × 28 L = 7
10	23 – 0148	RUBBER PLUG	1	
11	23 – 0411	SCREW	1	SM15/64" × 28 L = 7
12	23 – 0412	UPPER FEED LINK	1	
13	23 – 0413	FELT	1	
14	23 – 0414	CLIP CV – 70S	1	
15	23 – 0415	HINGE SCREW	2	
16	23 – 0416	HINGE SCREW	1	
17	23 – 0417	SLIDE BLOCK	2	
18	23 – 0418	WASHER	1	
19	23 – 0419	TRIANGULAR LEVER	1	
20	23 – 0420	SCREW	1	SM11/64" × 40 L = 5
21	23 – 0498	PRESSER BAR LOWER BUSHING	1	
22	23 – 0422	FELT	1	
23	23 – 0423	WALKING BAR DRIVING LINK	1	
24	23 – 0424	WALKING BAR	1	
25	23 – 0425	WALKING BAR ASM.	1	
26	23 – 0426	WALKING BAR SPRING	1	
27	23 – 0427	SCREW	1	SM15/64" × 28 L = 17
28	23 – 0428	UPPER FEED GUIDE PLATE	1	
29	23 – 0429	ROLLER	1	
30	23 – 0430	SCREW	1	SM15/64" × 28 L = 19
31	23 – 0431	UPPER FEED ROD	1	
32	23 – 0432	HINGE SCREW	1	
33	23 – 0433	CONNECTING STUD	1	
34	23 – 0434	WASHER	1	
35	23 – 0435	NUT	1	SM11/64" × 40
36	23 – 0436	UPPER FEED REAR ARM	1	
37	23 – 0437	SCREW	1	M6 × 22
38	25 – 0438	PRESSER FOOT ASM.	1	
39	23 – 0439	PRESSER BAR	1	
40	23 – 0315	SCREW	2	SM11/64" × 40 L = 7.5
41	23 – 0441	PRESSER BAR HOLDER	1	
42	23 – 0315	SCREW	1	SM11/64" × 40 L = 8
43	23 – 0443	NUT	1	
44	23 – 0444	PRESSER SPRING	1	
45	23 – 0445	HINGE SCREW	1	
46	23 – 0446	THREAD RELEASE HOLDING PLATE	1	
47	23 – 0447	THREAD RELEASE SPRING	1	
48	23 – 0448	PRESSER LIFTER LEVER	1	
49	23 – 0449	DUIDE PLATE SPACER	1	
50	23 – 0450	SCREW	1	SM9/64" × 40 L = 9
51	23 – 0497	PRESSER ADJUSTING SCREW	1	
52	25 – 0452	WALKING FOOT	1	
53	23 – 0453	SCREW	1	SM11/64" × 40 L = 6.5

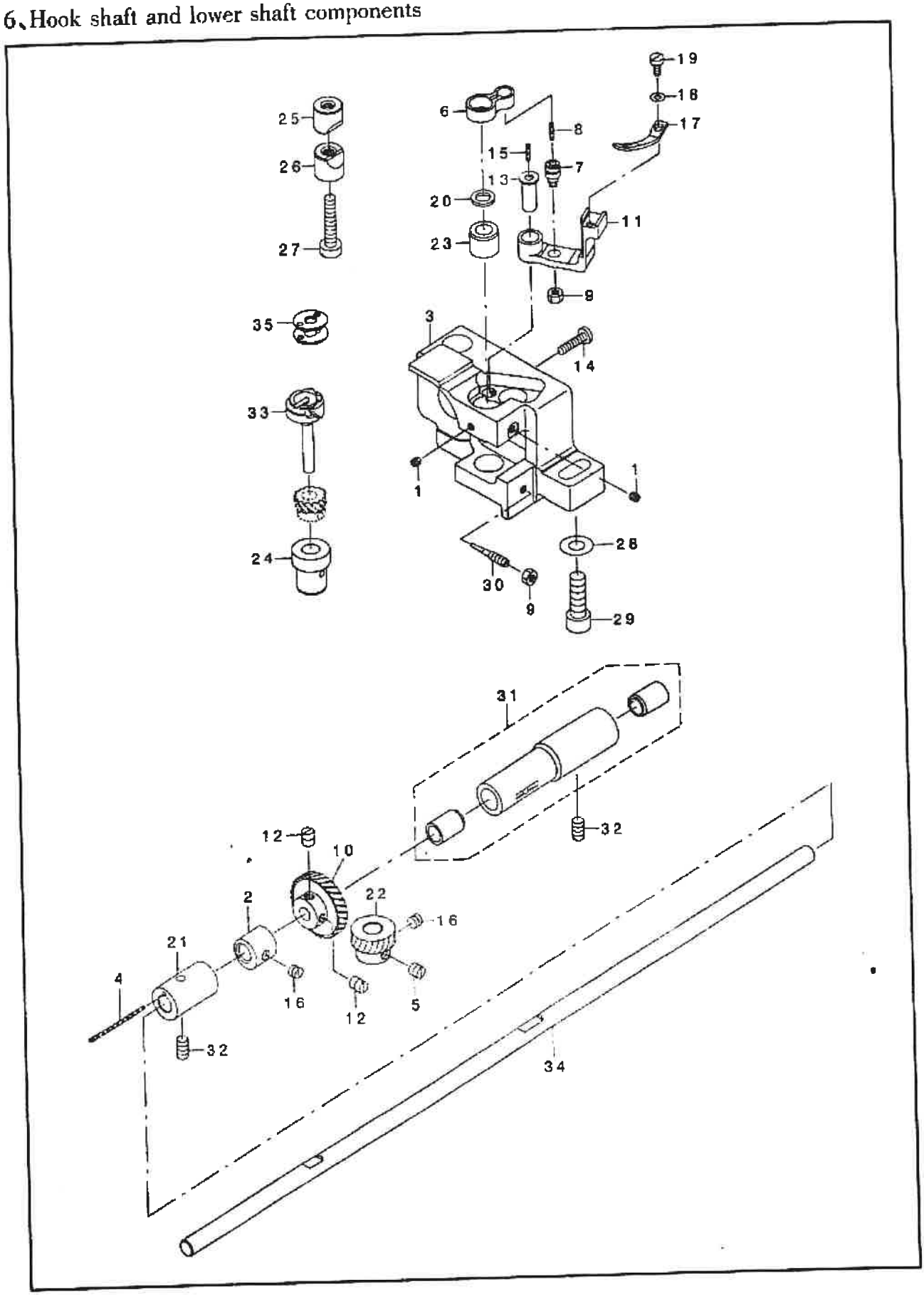
5、Feed mechanism components



5、Feed mechanism components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	25 - 0569	BACKWORD FEED PRESSER PLATE	1	
2	25 - 0502	FEED BASE	1	
3	25 - 0503	FEED BAR SLIDE FORK	1	
4	23 - 0504	SCREW	1	SM15/64" × 28 L = 14
5	23 - 0505	WASHER	1	
6	23 - 0506	SCREW	1	M5 × 5
7	23 - 0507	FEED BAR SHAFT	1	
8	23 - 0508	SNAP RING 5	1	
9	23 - 0509	OIL WICK	1	
10	23 - 0510	FEED ROCKER	1	
11	23 - 0511	SCREW	2	SM11/64" × 40 L = 14
12	23 - 0512	FEED ROCK SHAFT	1	
13	23 - 0513A、B	FEED ROCK SHAFT METAL	各 1	
14	23 - 0305	SCREW	1	SM15/64" × 28 L = 10.5
15	23 - 0515	FEED ROCK SHARFT CRANK	1	
16	23 - 0516	SCREW	1	SM3/16" × 28 L = 15.5
17	23 - 0257	SCREW	3	SM11/64" × 40 L = 7
18	23 - 0407	MAIN SHAFT THRUST COLLAR	2	
19	23 - 0408	SCREW	6	SM1/4" × 40 L = 6
20	23 - 0520	NEEDLE BAR FRAME ROD	1	
21	23 - 0521	HINGE SCREW	2	SM9/32" × 28
22	23 - 0522	NUT	2	SM9/32" × 28
23	23 - 0523	FEED ADJUSTING BASE	1	
24	23 - 0524	FEED ADJUSTING BASE COVER	2	
25	23 - 0315	SCREW	4	SM11/64" × 40 L = 8
26	23 - 0526	SQUARE BLOCK	2	
27	23 - 0527	FEED ADJUSTING BASE SUPPORT	2	
28	23 - 0206	SCREW	3	SM15/64" × 28 L = 8
29	23 - 0529	FELT SUPPORT	1	
30	23 - 0530	SCREW	2	SM9/64" × 40 L = 6
31	23 - 0531	ECCENTRIC PIN	1	
32	23 - 0532	SCREW	2	SM9/64" × 40 L = 8.5
33	23 - 0533	FEED ADJUSTING ROD	1	
34	23 - 0534	HINGE SCREW	1	
35	23 - 0535	SPRING	1	
36	23 - 0536	SPRING HOOK	1	
37	23 - 0537	SCREW	2	SM11/64" × 40 L = 16
38	25 - 0539	FEED ADJUSTING A	1	
39	25 - 0568	BACKWORD FEED LEVER B	1	
40	23 - 0540	SCREW	1	M6 × 18
41	25 - 0542	FEED DIAL A	1	
42	25 - 0587	FEED DOG	1	
43	23 - 0543	SCREW	1	SM3/16" × 28 L = 18
44	23 - 0544	FEED REGULATOR SCREW	1	
45	23 - 0545	RUBBER RING	1	
46	23 - 0546	PIN	1	
47	23 - 0547	FEED REGULATOR PIN SPRING	1	
48	25 - 0575	CHANGE BASE	1	
49	23 - 0549	FEED LINK	1	
50	23 - 0550	CONNECTING FORKED LINK PIN	1	
51	23 - 0551	OIL WICK	1	
52	23 - 0552	SCREW	1	M5 × 6
53	23 - 0553	FEED ROD A	1	
54	23 - 0554	FEED LINK PIN	1	
55	23 - 0555	HINGE SCREW	1	
56	25 - 0561	BACKWORD FEED LEVER SHAFT	1	
57	25 - 0588	SCREW	2	SM1 8" × 40 L = 7
58	25 - 0564	FELT	1	
59	23 - 0559	THRUST COLLAR	1	
60	25 - 0571	BACKWORD FEED LINK FULLRUM	1	
61	23 - 0561	E - RING 9	1	
62	25 - 0583	FEED SPRING HOOK	1	
63	25 - 0582	TENSION SPRING	1	
64	25 - 0581	SPRING SUSPENSION	1	
65	25 - 0584	WASHER	1	
66	25 - 0585	REVERSE FEED LEVER STOPPER	1	
67	25 - 0572	WASHER	1	
68	25 - 0573	SPRING WASHER	1	
69	25 - 0576	CONNECTING PIN	1	
70	25 - 0577	CAM ROLL	1	
71	25 - 0578	E - RING 4	1	
72	25 - 0574	SCREW	1	SM15/64" × 28
73	25 - 0586	SCREW	1	SM11/64" × 40 L = 24
74	25 - 0580	SCREW	1	SM3/16" × 28 L = 7
75	23 - 0450	SCREW	1	SM11/64" × 40 L = 9
76	25 - 0558	FEED TRIANGULAR CAM ROD	1	
77	25 - 0556	FEED TRIANGULAR CAM PIN	1	
78	25 - 0557	REAR CRANK	1	

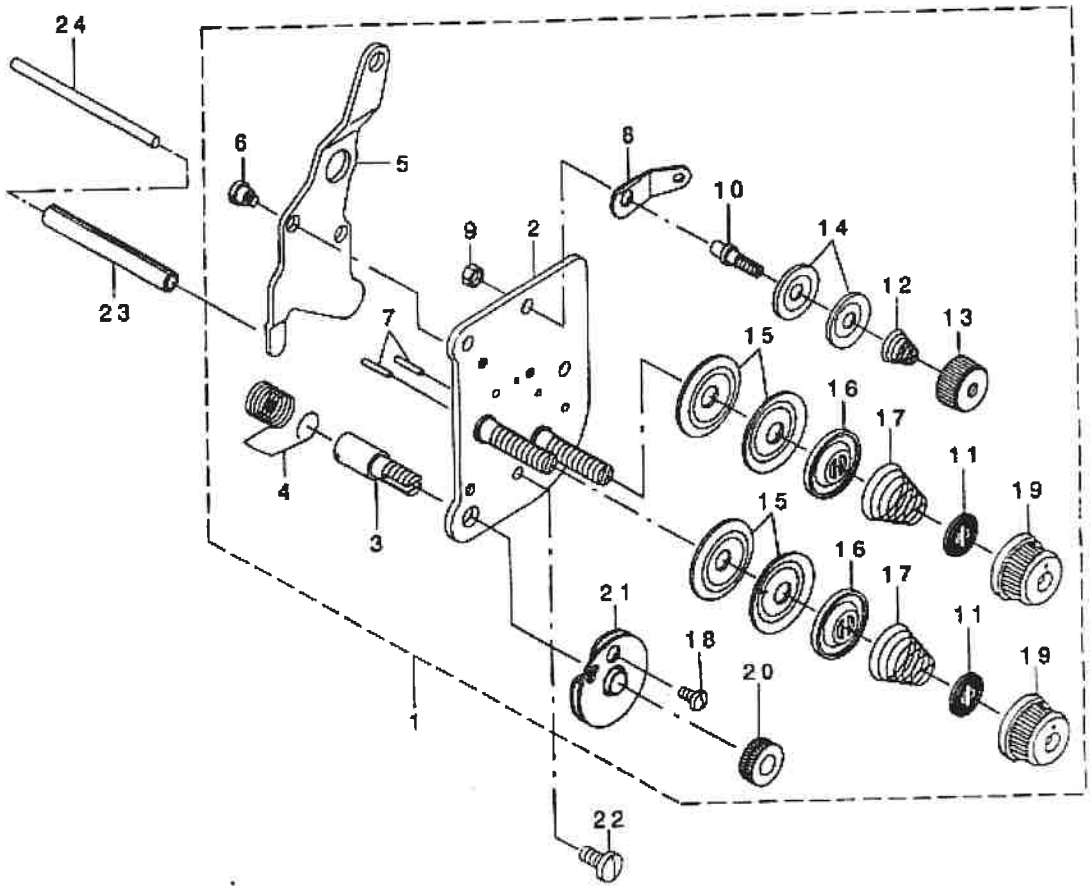
6、Hook shaft and lower shaft components



6、Hook shaft and lower shaft components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	23 – 0655	SCREW	2	SM11/64" × 40 L = 4
2	25 – 0631	VERTICAL FEED CAM	1	
3	25 – 0601	HOOK SHAFT BASE (RIGHT)	1	
4	25 – 0627	OIL WICK	1	
5	23 – 0546	SCREW	1	SM1/4" × 40 L = 6. 2
6	23 – 0606	BOBBIN CASE OPENING LEVER LINK	1	
7	23 – 0607	CRANK SCREW STUD	1	
8	23 – 0608	OIL WICK	1	
9	23 – 0609	NUT	2	SM11/64" × 40
10	23 – 0648	HOOK DRIVING SHAFT GEAR, LARGE	1	
11	23 – 0611	BOBBIN CASE OPNING LEVER CRAN	1	
12	23 – 0216	SCREW	2	SM1/4" × 40 L = 8
13	23 – 0613	OPENING LEVER CRANK PIN	1	
14	23 – 0614	SCREW	1	SM11/64" × 40 L = 18
15	23 – 0615	OIL WICK	1	
16	23 – 0644	SCREW	2	SM1/4" × 40 L = 4. 5
17	23 – 0617	BOBBIN CASE OPENING LEVER	1	
18	23 – 0618	WASHER	1	
19	23 – 0619	SCREW	1	SM9/64" × 40 L = 7. 5
20	23 – 06**	THRUST WASHER	1	
21	25 – 0626	HOOK DRIVING SHAFT FRONT METAL	1	
22	23 – 0645	HOOK DRIVING SHAFT GEAR, SMALL	1	
23	23 – 0623	HOOK SHAFT UPPER METAL	1	
24	23 – 0624	HOOK SHAFT LOWER METAL	1	
25	23 – 0625	SADDLE INSTALLING BLOCK, UPPER	1	
26	23 – 0626	SADDLE INSTALLING BLOCK, LOWER	1	
27	23 – 0627	SCREW	1	SM15/64" × 28 L = 30
28	23 – 0628	WASHER	1	
29	23 – 0629	SCREW	1	M8 × 25
30	25 – 0621	OIL ADJUSTING SCREW	1	
31	23 – 0640	BUSHING ASM., INTERMEDIATE	1	
32	23 – 0305	SCREW	2	SM15/64" × 28 L = 10. 5
33		HOOK ASM., FOR EXTREME THICK T	1	
34	25 – 0625	LOWER SHAFT	1	
35	23 – 0635	BOBBIN	1	

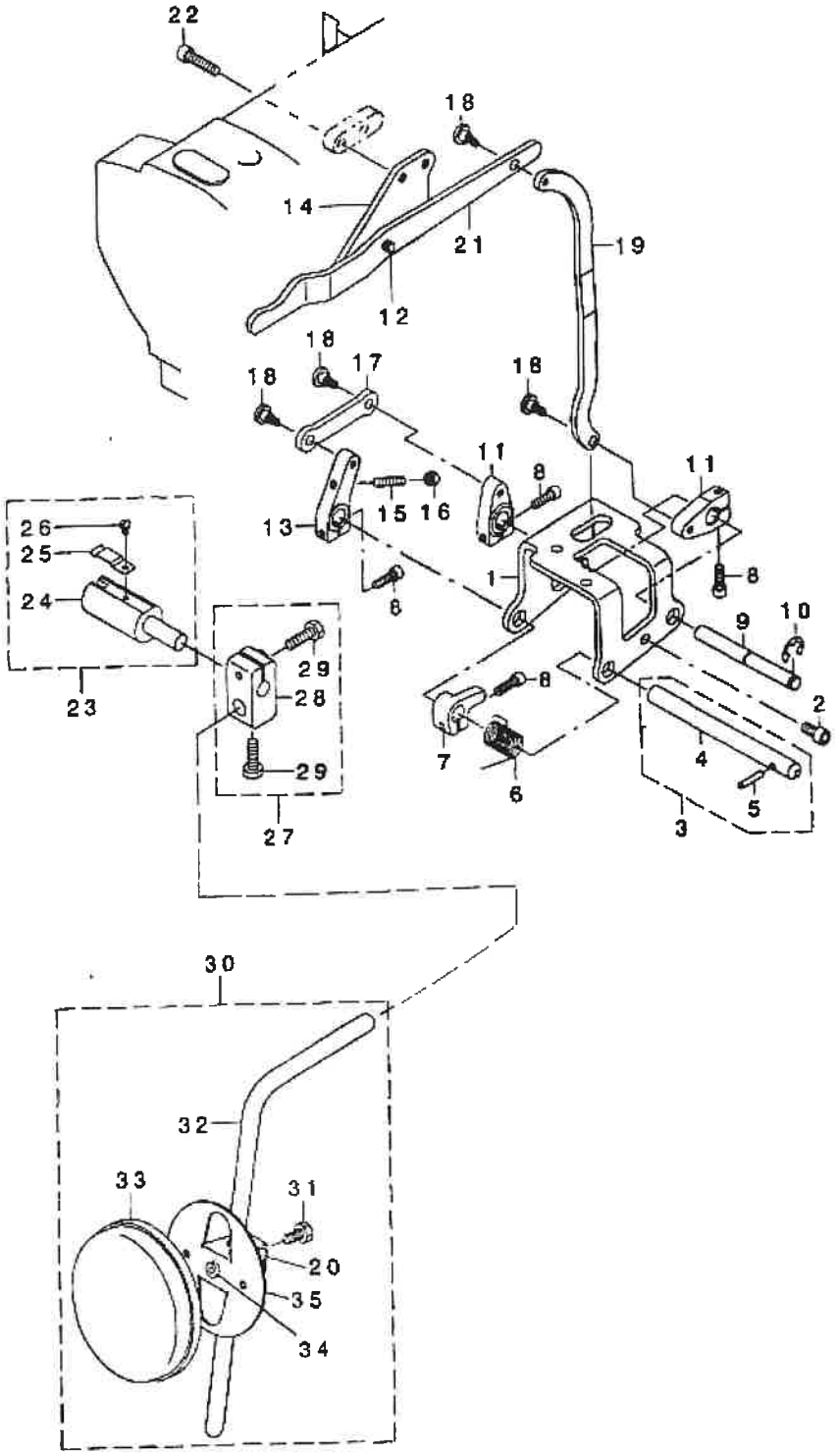
7、Thread tension components



7、Thread tension components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	25 – 0701	THREAD TENSION ASM.	1	
2	25 – 0704	TENSION POST COMPL.	1	
3	25 – 0703	SCREW STUD	1	
4	25 – 0702	TENSION SPRING	1	
5	23 – 0905	TENSION RELEASE PLATE	1	
6	23 – 0906	HINGE SCREW	2	
7	25 – 0707	TENSION RELEASE PIN, A	2	
8	25 – 0721	THREAD GUIDE	1	
9	23 – 0909	NUT	1	SM11/64" × 40
10	23 – 0910	THREAD TENSION POST, A	1	
11	23 – 0911	ROTATING STOPPER	2	
12	23 – 0912	THREAD TENSION SPRING	1	
13	23 – 0913	THREAD TENSION NUT	1	
14	25 – 0718	FIRST THREAD TENSION PLATE	1	
15	23 – 0915	THREAD TENSION DISK	2	
16	23 – 0916	THREAD TENSION DISK PRESSER	1	
17	23 – 0917	TENSION SPRING(1.2)	1	
18	23 – 0918	SCREW	1	
19	23 – 0919	THREAD TENSION KNOB, BLUE	1	
20	23 – 0932	THREAD TENSION NUT	1	
21	25 – 0705	TAKE UP SPRING GUIDE DISC ASM.	1	
22	23 – 0315	SCREW	2	SM11/64" × 40 L = 8.5
23	23 – 0937	SPRING PIN	1	
24	23 – 0935	TENSION RELEASE BAR	1	

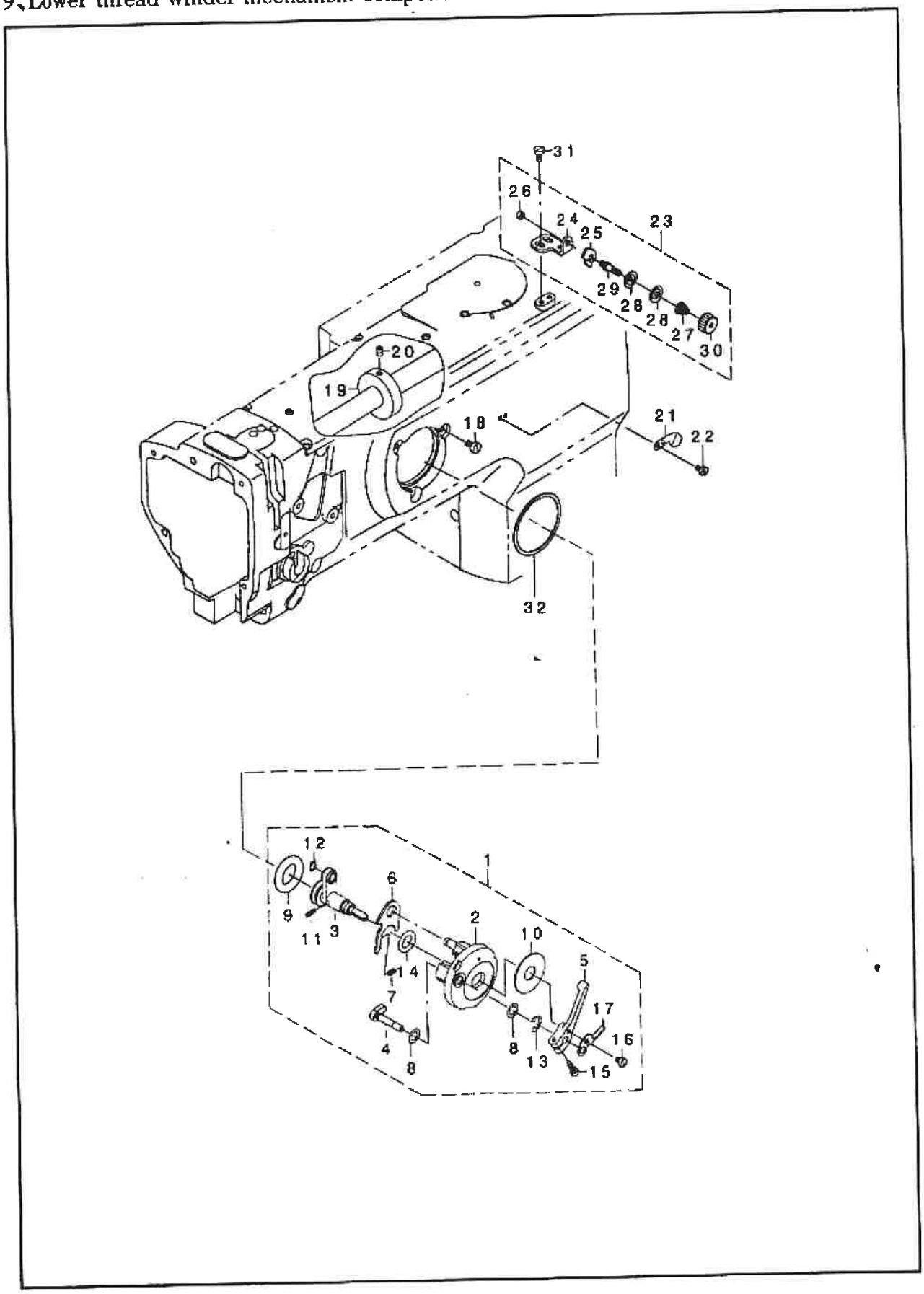
8、Knee lifting components



8、Knee lifting components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	23 - 1101	KNEE LIFTER SHAFT BASIS	1	
2	23 - 1102	SCREW	3	M6 × 12
3	23 - 1103	KNEE LIFTER SHAFT A ASM.	1	
4	23 - 1104	KNEE LIFTER SHAFT A	1	
5	23 - 1105	KNEE LIFTER SHAFT PIN	1	
6	23 - 1106	KNEE LIFTER SHAFT A SPRING	1	
7	23 - 1107	KNEE LIFTER SPRING RACK	1	
8	23 - 1108	SCREW	4	M5 × 16
9	23 - 1109	KNEE LIFTER SHAFT B	1	
10	23 - 1110	E - SHAPED SNAP RING(8MM)	1	
11	23 - 1111	KNEE LIFTER LEVER B	2	
12	23 - 1137	HINGE SCREW	1	
13	23 - 1113	KNEE LIFTER LEVER A	1	
14	23 - 1138	KNEE LIFTER PLATE	1	
15	23 - 1115	SCREW	1	M5 × 25
16	23 - 1116	NUT	1	M5
17	23 - 1117	KNEE LIFTER LINK	1	
18	23 - 1120	HINGE SCREW	4	
19	23 - 1119	KNEE LIFTER CONNECTING PLATE	1	
20	20 - 0721	KNEE LIFTER JOINT	1	
21	23 - 1121	KNEE LIFTER LEVER ASM.	1	
22	23 - 1122	SCREW	2	SM9/64" × 40 L = 25
23	23 - 1123	KNEE LIFTER JOINT ASM.	1	
24	23 - 1124	KNEE LIFTER JOINT	1	
25	23 - 1125	PRESSER SPRING	1	
26	23 - 1126	SCREW	1	SM9/64" × 40 L = 4. 7
27	23 - 1127	BRACKET ASM.	1	
28	23 - 1128	BRACKET	1	
29	20 - 0711	SCREW	2	M6 × 24
30	20 - 0716	KNEE PRESS PLATE ASM.	1	
31	20 - 0722	SCREW	1	M6 × 12
32	20 - 0718	KNEE PRESS LEVER		
33	20 - 0717	KNEE PAD PLATE COVER	1	
34	20 - 0719	KNEE PAD PLATE RUBBER	1	
35	20 - 0720	KNEE PAD PLATE	1	

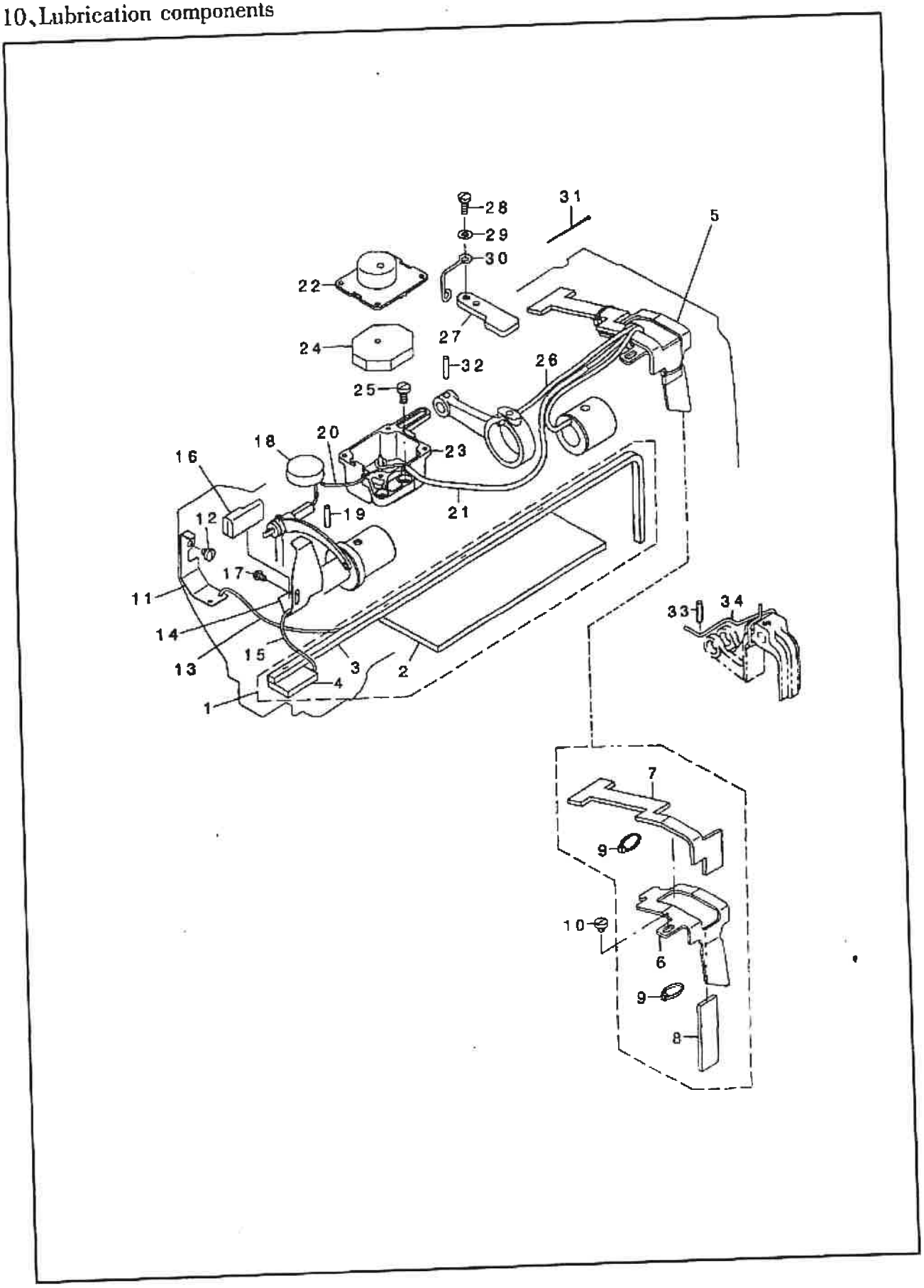
9、Lower thread winder mechanism components



9、Lower thread winder mechanism components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	23 - 1201	BOBBIN DEVICE ASM.	1	
2	23 - 1202	BOBBIN FITTING BASIS COMPL.	1	
3	23 - 1203	BOBBIN SHAFT COMPL.	1	
4	23 - 1204	BOBBIN CAM SHAFT COMPL.	1	
5	23 - 1205	BOBBIN LEVER	1	
6	23 - 1206	DAJUSTING PLATE	1	
7	23 - 1207	PRESSUR FOOT SPRING	1	
8	23 - 1208	VERTICAL ROLLER WASHER	1	
9	23 - 1209	RUBBER RING	1	
10	23 - 1210	CUSHION	1	
11	23 - 1211	SPRING	1	
12	23 - 1212	RETAINING RING	1	
13	23 - 1213	E - RING	1	
14	23 - 1214	RUBBER RING	1	
15	23 - 1215	SCREW	1	SM9/64" × 40 L = 13.5
16	23 - 1216	SCREW	1	SM9/64" × 40 L = 5
17	23 - 1217	BOBBIN ADJUSTING PLATE	1	
18	23 - 1218	SCREW	3	SM11/64" × 40 L = 8
19	23 - 1219	BOBBIN FRICTION WHEEL	1	
20	23 - 1220	SCREW	2	M5 × 6
21	23 - 1221	THREAD CUTTER	1	
22	23 - 1222	SCREW	2	SM9/64" × 40 L = 6
23	23 - 1223	LOWER THREAD GUIDE ASM.	1	
24	23 - 1224	FITTING BASE	1	
25	23 - 1225	THREAD GUIDE	1	
26	23 - 1226	NUT	1	SM11/64" × 40
27	23 - 1227	TENSION SPRING NO. 1	1	
28	23 - 1228	BOBBIN WINDER TENSION DISC	2	
29	23 - 1229	THREAD TENSION POST	1	
30	23 - 1230	THREAD TENSION NUT	1	
31	23 - 1231	SCREW	2	SM3/16" × 32 L = 9
32	23 - 1232	PACKING	1	

10、Lubrication components



10、Lubrication components

REF. NO.	PART NO.	DESCRIPTION	Qty	NOTE
1	23 – 1501	ARM ONCE THROUGH OIL FELT ASM.	1	
2	23 – 1502	ARM ONCE THROUGH FELT A	1	
3	23 – 1503	ARM ONCE THROUGH FELT B	1	
4	23 – 1504	FACE ONCE THROUGH FELT	1	
5	23 – 1505	FELT SUPPORT ASM.	1	
6	23 – 1506	FELT SUPPORT	1	
7	23 – 1507	FEED CHANGE FELT	1	
8	23 – 1508	FELT	1	
9	23 – 0414	CLIP CV – 70S	2	
10	23 – 1510	SCREW	1	SM11/64" × 40 L = 4.3
11	23 – 1511	UPPER FEED OIL BAR PLATE	1	
12	23 – 1512	SCREW	1	SM11/64" × 40 L = 5
13	23 – 1513	OIL WICK	1	
14	23 – 1514	TAKE – UP OIL SPLASHER	1	
15	23 – 1515	OIL WICK	1	
16	23 – 1516	TAKE – UP LUBRICATION FELT	1	
17	23 – 1517	SCREW	1	SM9/64" × 40 L = 6
18	23 – 1518	FELT	1	
19	23 – 1519	FELT	1	
20	23 – 1533	OIL WICK	1	
21	25 – 1121	OIL TUBE	1	
22	25 – 1122	OIL TANK A	1	
23	25 – 1123	OIL TANK B	1	
24	25 – 1124	FELT	1	
25	23 – 1528	SCREW	2	SM11/64" × 40 L = 9.5
26	23 – 1560	OIL WICK	1	
27	23 – 0473	UPPER FEED STOPPERPLATE(B)	1	
28	23 – 0315	SCREW	2	SM11/64" × 40 L = 7.5
29	23 – 1562	WASHER	1	
30	23 – 1561	OIL WICK HOLDER	1	
31	23 – 1565	CLIP CV – 70S	1	
32	25 – 1132	SPRING PIN 5 × 20	1	
33	25 – 1132	FELT	1	
34	25 – 1134	OIL WICK	1	

11、Accessories parts components