



BT 1850 SERIES

Bartack machines

CSMP

**spare parts &
instruction manual**

IMPORTANT SAFETY INSTRUCTIONS

get the most out of the many functions of this machine and operate it in safety, it is necessary to use this machine correctly.
Please read this Instruction Manual carefully before use. We hope you will enjoy the use of your machine for a long time. Please remember to keep this manual in a safe place.

- Observe the basic safety measures, including, but not limited to the following ones, whenever you use the machine.
- Read all the instructions, including, but not limited to this Instruction Manual before you use the machine. In addition, keep this Instruction Manual so that you may read it at anytime when necessary.
- Use the machine after it has been ascertained that it conforms with safety rules/standards valid in your country.
- All safety devices must be in position when the machine is ready for work or in operation. The operation without the specified safety devices is not allowed.
- This machine shall be operated by appropriately-trained operators.
- For your personal protection, we recommend that you wear safety glasses.
- For the following, turn off the power switch or disconnect the power plug of the machine from the receptacle.
 - 7-1 For threading needle(s), looper, spreader etc. and replacing bobbin.
 - 7-2 For replacing part(s) of needle, presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, cloth guide etc.
 - 7-3 For repair work.
 - 7-4 When leaving the working place or when the working place is unattended.
 - 7-5 When using clutch motors without applying brake, it has to be waited until the motor stopped totally.
- If you should allow oil, grease, etc. used with the machine and devices to come in contact with your eyes or skin or swallow any of such liquid by mistake, immediately wash the contacted areas and consult a medical doctor.

Tampering with the live parts and devices, regardless of whether the machine is powered, is prohibited.
Repair, remodeling and adjustment works must only be done by appropriately trained technicians or specially skilled personnel. Only spare parts designated by JUKI can be used for repairs.
General maintenance and inspection works have to be done by appropriately trained personnel.
Repair and maintenance works of electrical components shall be conducted by qualified electric technicians or under the audit and guidance of specially skilled personnel.
Whenever you find a failure of any of electrical components, immediately stop the machine.
Before making repair and maintenance works on the machine equipped with pneumatic parts such as an air cylinder, the air compressor has to be detached from the machine and the compressed air supply has to be cut off. Existing residual air pressure after disconnecting the air compressor from the machine has to be expelled.
Exceptions to this are only adjustments and performance checks done by appropriately trained technicians or specially skilled personnel.
Periodically clean the machine throughout the period of use.

Grounding the machine is always necessary for the normal operation of the machine. The machine has to be operated in an environment that is free from strong noise sources such as high-frequency welder.
An appropriate power plug has to be attached to the machine by electric technicians. Power plug has to be connected to a grounded receptacle.

The machine is only allowed to be used for the purpose intended. Other used are not allowed.
Remodel or modify the machine in accordance with the safety rules/standards while taking all the effective safety measures. JUKI assumes no responsibility for damage caused by remodeling or modification of the machine.

Warning hints are marked with the two shown symbols.



Danger of injury to operator or service staff



Items requiring special attention

FOR SAFE OPERATION



1. To avoid immediate rotation of the machine after turning the power on, check to be sure that the cloth feed cam on the machine head is in the stop-motion position.
2. To avoid possible personal injury, never operate the machine with safety devices such as belt-cover and eye protecting cover removed.
3. To avoid possible personal injury due to involvement, keep your fingers, head and clothes away from the handwheel, V belt and motor while the machine is in operation. In addition, place nothing near the aforementioned parts.
4. To avoid possible personal injury, never place your fingers near the needle when turning the power on or while the machine is in operation.
5. To avoid possible personal injury, never place your fingers inside the thread take-up cover while the machine is in operation.
6. The hook rotates at a high speed while the machine is in operation. To avoid possible injury to hands, keep your hands away from the hook while the machine is in operation. In addition, be sure to turn the power off when replacing a bobbin.
7. To avoid possible personal injury, exercise care not to allow your fingers to get caught in the machine when tilting the machine or returning it to the home position.
8. To avoid possible accidents due to abrupt start of the machine, turn the power off when tilting the machine head and removing the belt cover and the V belt.
9. To prevent possible accidents because of electric shock, do not operate the machine with the power earth removed.
10. Be sure to turn off the power switch in prior to the connection/disconnection of the power plug.
11. In time of thunder and lightning, stop your work and disconnect the power plug for safety's sake.
12. If the machine is suddenly moved from a cold place to a warm place, dew condensation may be observed. In this case, turn on the power to the machine after you have confirmed that there is no danger of water drops in the machine.



CAUTION :

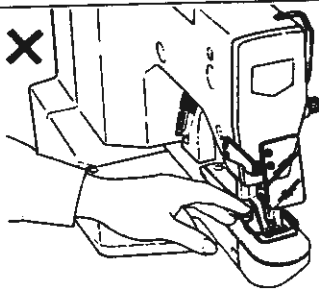
The safety devices, "eye guard cover", "finger guard", etc., may be omitted in the figures of this manual for easy explanation. Never use the machine with these safety devices removed.

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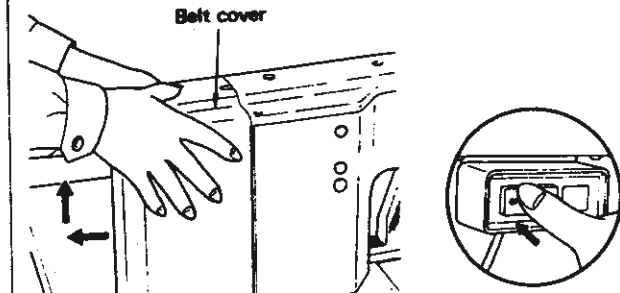
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**WARNING :**

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

IMPORTANT SAFETY INSTRUCTIONS

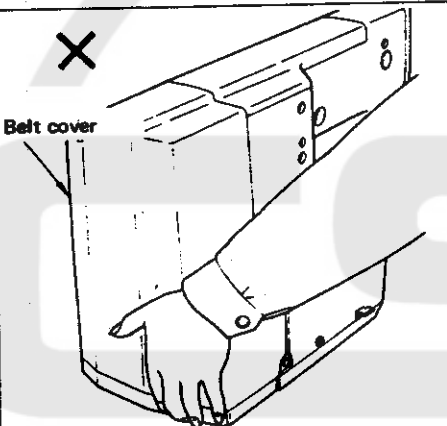
1. Do not place your fingers near the work clamp foot while the machine is in operation.



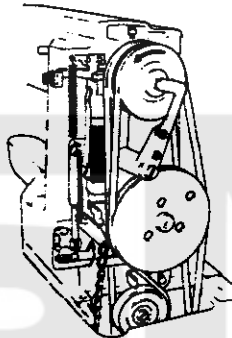
2. Make sure to turn off the power switch before removing the belt cover.

3. Never bring your fingers or hair close to, or place anything on the handwheel, V-belt, bobbin winder wheel or motor during operation. It may lead to serious personal injuries.

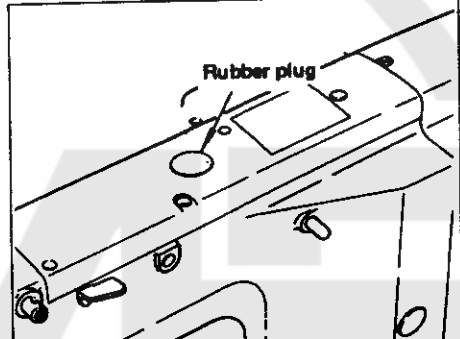
4. If your machine is provided with a belt cover, finger guard and eye guard, never operate your machine with any of them removed.

CAUTIONS BEFORE OPERATION

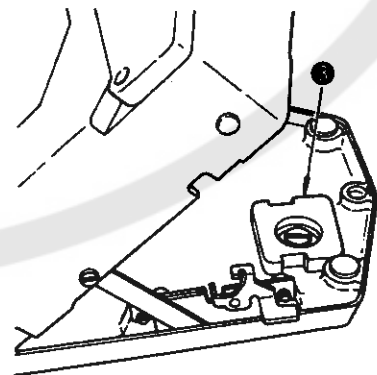
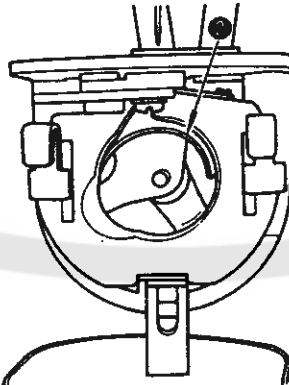
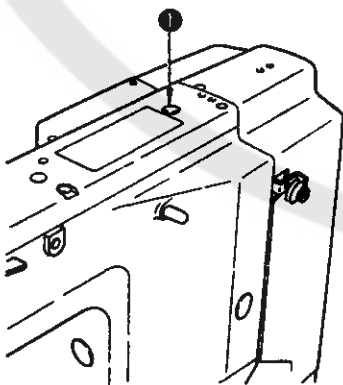
1. Do not hold the belt cover when carrying the sewing machine.



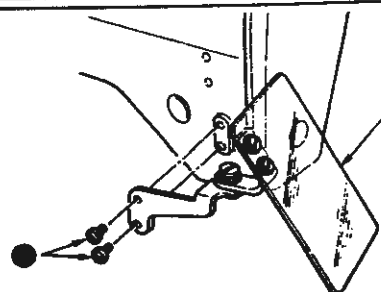
2. The sewing machine should run in the arrowed direction. Never allow the machine to run in the reverse direction.



3. Remove the rubber plug. If the felt placed inside has dried, lubricate the machine referring to the description given in "9. Lubrication".



4. Before starting a machine which has been newly set up or has not been used for a long period of time, apply a few drops of the lubricating oil to main shaft components through hole ①, one drop to the racing surface ② of the shuttle race, and infiltrate sufficient amount of the lubricating oil to the machine bed oil felt ③.



5. Be sure to fix eye protecting cover ④ with screw ⑤ on machine frame before putting the machine into service.

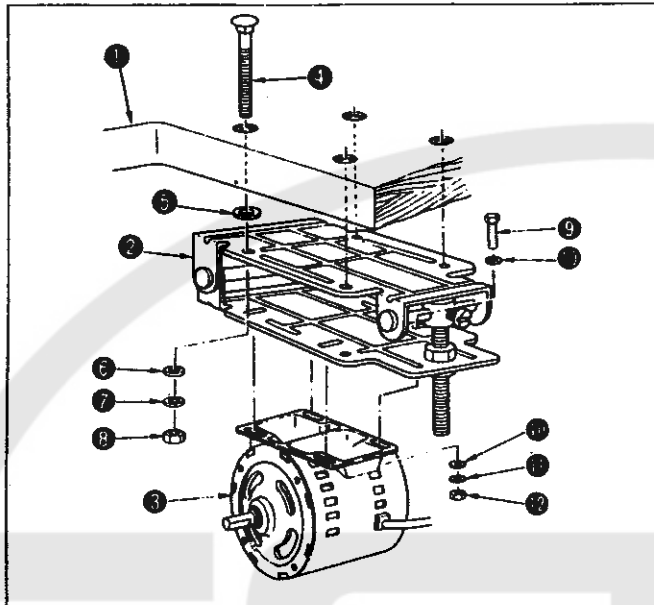


WARNING:
The machine has to be installed by a serviceman or maintenance personnel in accordance with the Instruction Manual. Set-up of the machine has to be started after turning OFF the power to the machine.

1. INSTALLING THE MOTOR



WARNING:
Carry out the following steps of procedure after the power switch has been turned OFF.

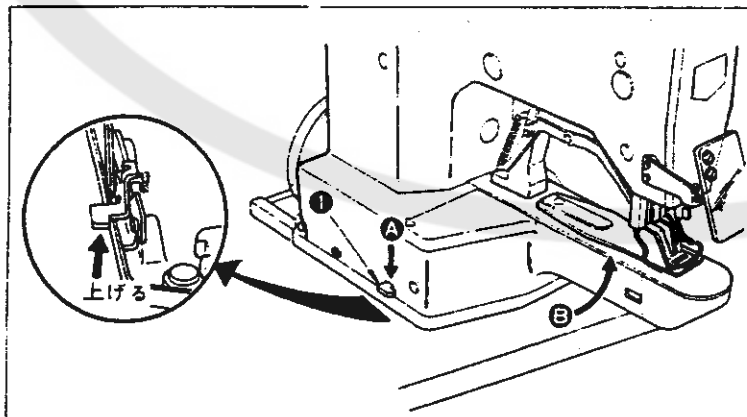


1. Attach motor base ② to table ① using bolt ④, vibration-proof rubber pad ⑤, washer ⑥, spring washer ⑦, and nut ⑧.
2. Using bolt ⑩, washer ⑪, spring washer ⑫, and nut ⑬, install motor ⑨ to motor base ②.

3. RAISING THE MACHINE HEAD



WARNING:
Carry out the following steps of procedure after the power switch has been turned OFF.

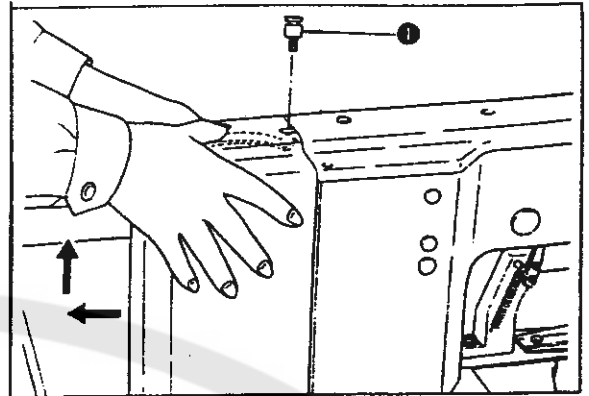


1. Remove the belt cover. With the machine head set in its installing position on the machine table, raise the machine head in direction ② while pushing down (in direction ①) bed locker ①.
 2. Releasing the bed locker, further raise the machine head in direction ② until it locks.
- ★ To lower the machine head, push up the bed locker to release the lock.

2. REMOVING THE BELT COVER



WARNING:
Carry out the following steps of procedure after the power switch has been turned OFF.



To remove the belt cover, loosen screw ① and tilt the belt cover away from you until it comes off then lift it.

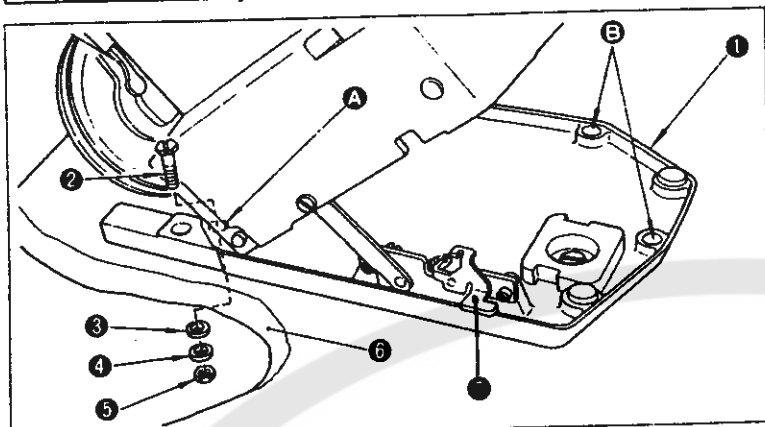
★ Install the belt cover by reversing the above procedure.

4. INSTALLING THE MACHINE HEAD



WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine. Be sure to raise the machine head with both hands. Move your hands off the machine head after ascertaining that the bed locker has been locked.



1. Install bed mounting base ① to machine table ② using bolts ③, flat washers ④ and ⑤, and nuts ⑥ (each 3 pcs.).
2. Fix point ⑦ before raising the machine head. Then fix two points ⑧.



WARNING:

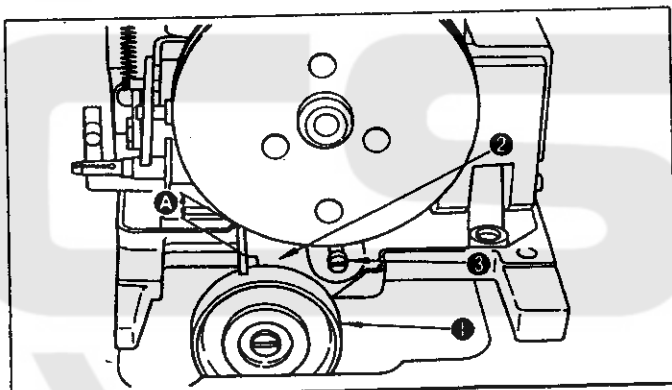
Keep your hands away from bed locker ⑦ after the machine head has been raised. Do not place your hands or anything between the machine head and the bed.

5. ATTACHING THE IDLER PULLEY



WARNING:

Carry out the following steps of procedure after the power switch has been turned OFF.



Fix idler pulley ① to mounting plate ② by setscrew ③.

(Caution) Adjust the clearance at ④ to just allow the V belt to pass it through.

6. MOTOR PULLEYS AND BELTS

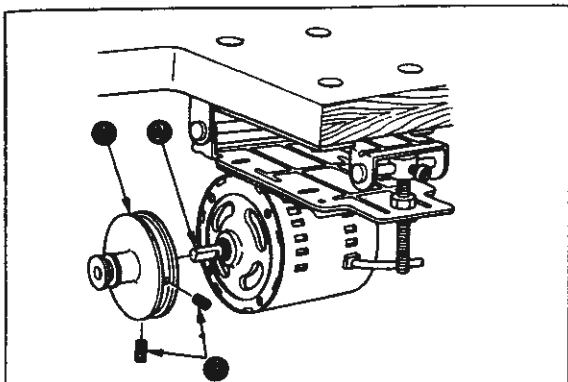
1. M-type V belts are used for this model of sewing machine.
2. This sewing machine uses two V belts, one for high-speed sewing, and the other for low-speed sewing.
3. The table below shows the relation between the motor pulleys, V belts, and sewing speeds.

Frequency	Sewing speed	Motor pulley part No.	Engraved mark	High-speed V belt	Low-speed V belt
50 Hz	2300 s.p.m.	*13531108	50-2300	MTJVM005000 (50")	MTJVM004600 (46")
	2000	*13531207	50-2000	MTJVM004900 (49")	
	1800	13531306	50-1800	MTJVM004800 (48")	
60 Hz	2300	*13531405	60-2300	MTJVM004900 (49")	MTJVM004600 (46")
	2000	*13531504	60-2000	MTJVM004800 (48")	
	1800	13531603	60-1800	MTJVM004800 (48")	

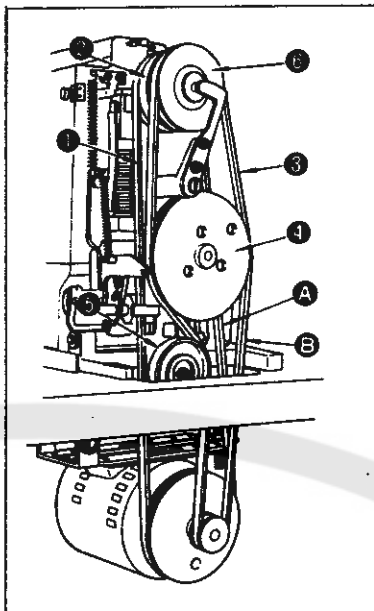
Note: The motor pulleys marked with asterisks are applicable only to cotton thread. Please order the motor pulleys for threads other than cotton thread.

**WARNING :**

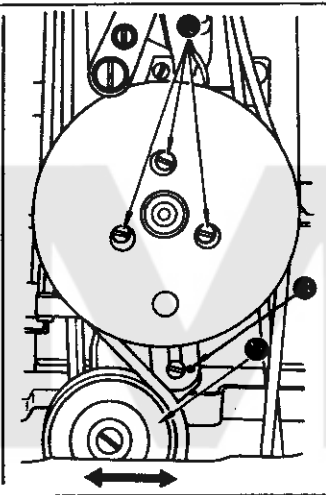
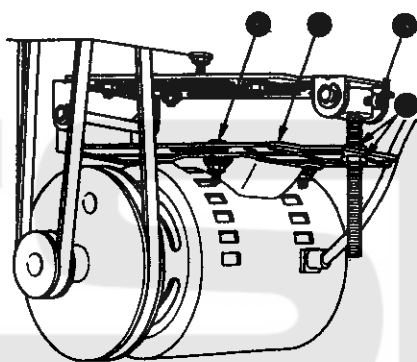
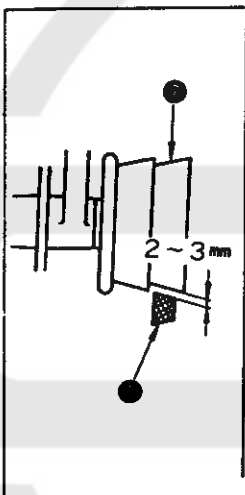
Carry out the following steps of procedure after the power switch has been turned OFF.

**★ Installing the motor pulley**

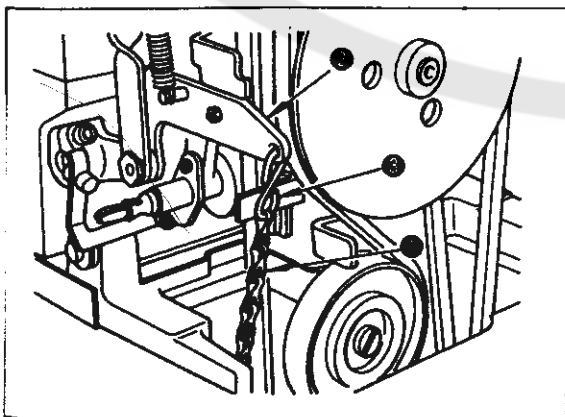
Set motor pulley ● onto motor shaft ● so that one of two setscrews ● meets the flat part of the motor shaft. Then tighten setscrews ●.

**★ Attaching the belts**

1. Set high-speed V belt ● on the large diameters of high-speed pulley ● and the motor pulley.
2. Set low-speed V belt ● on the small diameters of low-speed pulley ● and the motor pulley through pressure decreasing pulley ● and idler pulley ●.
3. Move the motor pulley back or forth to provide a 2 to 3mm clearance between high-speed V belt ● and bobbin winder wheel ●.
4. Loosen setscrew ●, and move the motor to the right or left to make adjustment so that the high-speed V belt comes evenly in contact with the bobbin winder wheel when the bobbin winder is used (refer to "15. Winding a bobbin").
5. Loosen setscrew ●, and move motor base ● up or down by adjusting nut ● to perform adjustment so that the high-speed V belt slacks about 10mm when you push the belt at middle ●.
6. Loosen setscrew ●, and move idler pulley ● in the arrowed direction to perform adjustment so that the low-speed V belt slacks about 10mm when you push the belt at middle ●. (At this time, set the idler pulley so that it is aligned with engraved marker dot ● on the installing plate.)

**7. ATTACHING THE CHAIN****WARNING :**

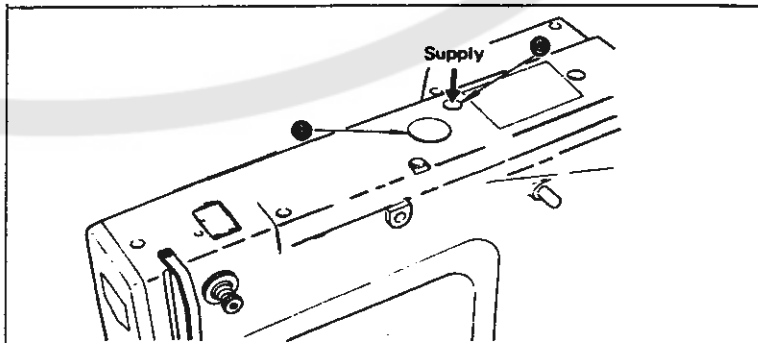
Carry out the following steps of procedure after the power switch has been turned OFF.



Hook S-shaped hook ● into the hole in the tip of starting lever ●, and attach chain ● to the S-shaped hook.

8. LUBRICATION**WARNING :**

Carry out the following steps of procedure after the power switch has been turned OFF.



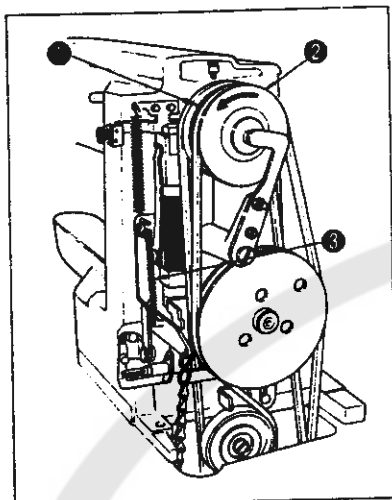
1. Lubricate the machine once a day from lubrication hole ●. The machine can also be lubricated by removing rubber plug ●.
2. Use Juki New Defrix Oil No. 2 or spindle oil No. 2 as the lubricating oil.

★ When using the thread guide (optionally available)
(optional available)

9. OPERATING THE SEWING MACHINE

Operate the sewing machine in the following procedure:

1. Turn on the power switch.
2. Depress the starting pedal a little, and the work clamp foot will come down. When you want to make the work clamp foot go up, release the pedal.
3. Further depress the pedal, and the sewing machine starts bar-tacking. Immediately after the sewing machine starts bar-tacking, release the pedal.
4. When the machine has completed the specified bar-tacking cycle, the work clamp foot will automatically go up, and the needle and bobbin threads are trimmed before the machine stops.



- (Cautions)
1. Be sure to release the pedal as soon as the machine starts bar-tacking, or else the machine will not stop at the predetermined point.
 2. If you fail to depress the pedal sufficiently, the machine may stop at the first stitch. In this case, depress the pedal again sufficiently.
 3. If the machine will not start even when you depress it strong enough, turn off the power switch, and remove the belt cover. Then turn changeover pulley ● (Knurled part) in the arrowed direction of low-speed pulley ●.
 4. This sewing machine may run rather unsmoothly on a cold morning because it uses grease for the lubrication of several parts. In such a case, allow the machine to idle for 5 or 6 times before starting the work.

★ To operate the sewing machine manually;

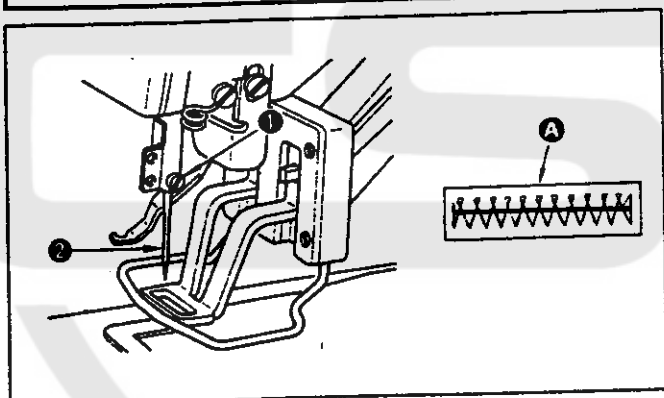


WARNING :

Carry out the following steps of procedure after the power switch has been turned OFF.

Turn off the power switch, remove the upper end of spring ●, give low-speed pulley ● two turns in the arrowed direction and the work clamp foot will come down. Then depress the starting pedal, and the machine can be run manually.

10. ATTACHING THE NEEDLE



WARNING :

Carry out the following steps of procedure after the power switch has been turned OFF.

Loosening setscrew ●, insert needle ● fully into the needle bar hole with the long groove of the needle facing towards you, then tighten setscrew ●.

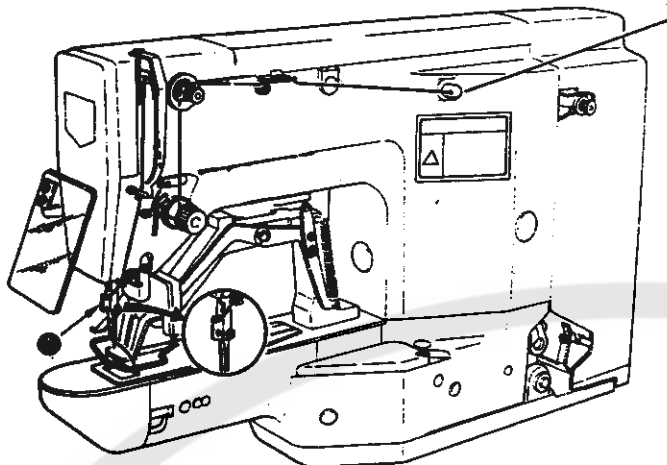
- (Cautions)
1. If the bar-tacking stitches as ● shown above are produced, install the needle so that it slightly faces to the left.
 2. Use a SUPER needle for synthetic fiber when sewing with synthetic fiber thread or material.

11. THREADING THE MACHINE



WARNING :

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

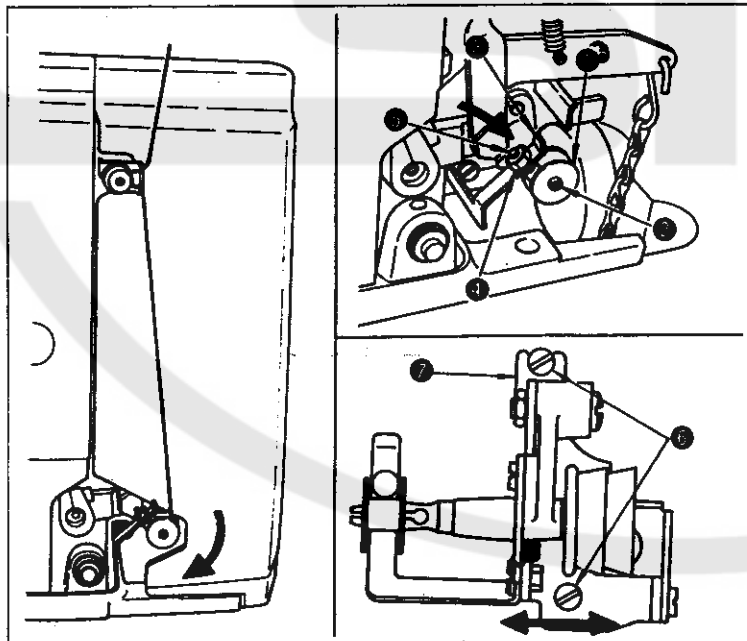


Thread the machine in the order as shown above. Leave thread of approx. 4cm on the needle.

(Cautions) 1. For a thick thread, pass the thread through only one of the two holes in needle bar thread guide



13. WINDING A BOBBIN



1. Attach bobbin ● to bobbin winder spindle ●.
2. Thread the winder in the order as illustrated and wind the thread onto the bobbin four or five turns.
3. Push bobbin winder trip latch ● towards the bobbin (in the arrowed direction), and the winder starts to wind the bobbin. The winder will automatically stop as soon as it has wound a predetermined amount (80% of the capacity of the bobbin) of thread round the bobbin.
4. To adjust the amount of thread wound round the bobbin, loosen nut ● and screw in adjusting screw ● to decrease the thread amount.
5. If the thread is not wound evenly round the bobbin, loosen screw ● and move bobbin winder base ● in the arrowed direction to make adjustment.

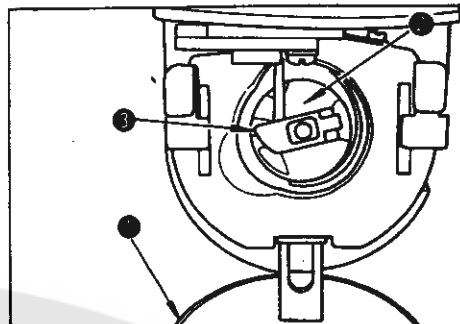
(Caution) Ensure to use the genuine JUKI bobbin case and bobbin.

12. REMOVING AND INSTALLING THE BOBBIN CASE



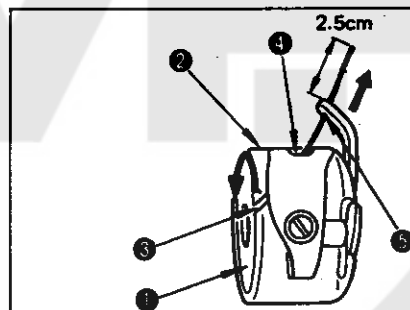
WARNING :

Carry out the following steps of procedure after the power switch has been turned OFF.



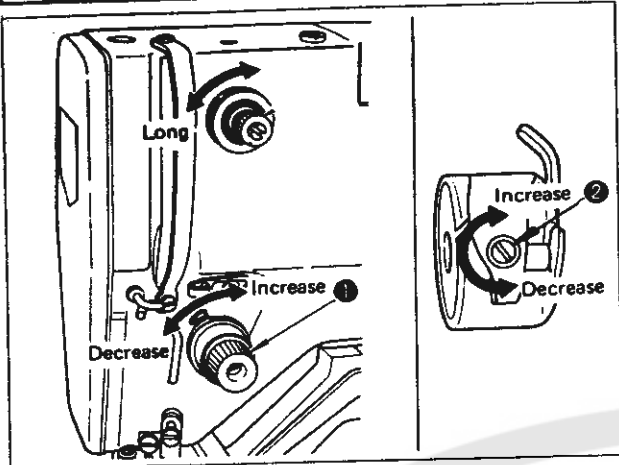
1. Open cylinder arm cap ●.
2. Raise and hold the latch lever of bobbin case ● to take it out. The bobbin in the bobbin case does not fall as far as latch lever ● is raised and held.
3. To load the bobbin case into the shuttle, fit it onto the shaft of the shuttle and snap in the latch lever of the bobbin case.

14. THREADING THE BOBBIN CASE



1. Hold bobbin ● in hand so that it spins counter-clockwise and set it in bobbin case ●.
2. Pass the thread through slot ● in the bobbin case. Pull the thread to pass it under the tension spring out to thread exit ●. At this time, confirm that the bobbin spins in the arrowed direction when the thread is pulled.
3. Pass the thread through hole ●, and allow the thread to trail about 2.5cm from the hole.

15. THREAD TENSION



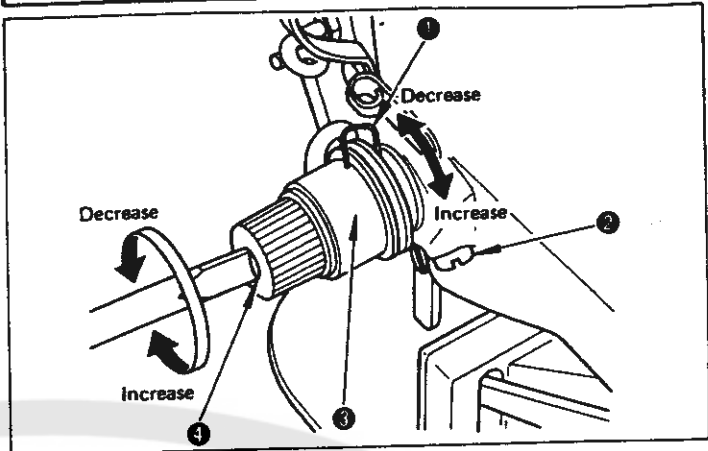
★ Adjusting the needle thread tension

As thread tension controller No. 1 (1) is turned clockwise, the needle thread tension increases, and vice versa.

★ Adjusting the bobbin thread tension

Turning thread tension adjusting screw (2) clockwise will increase the bobbin thread tension, and vice versa.

16. ADJUSTING THE THREAD TAKE-UP SPRING



The normal stroke of thread take-up spring (1) is 6 to 8mm, and the tension at the starting point is 30 to 50g.

★ Adjusting the stroke

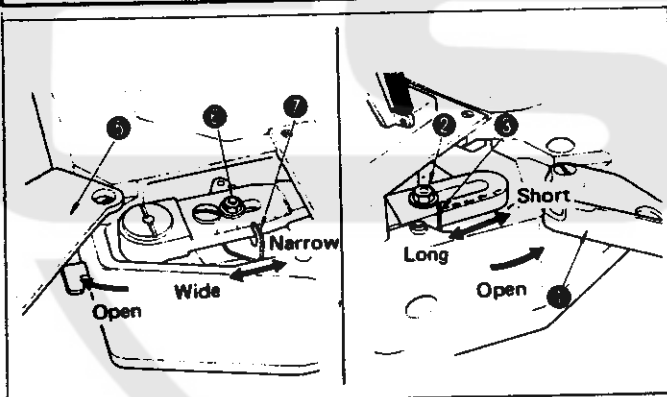
Loosen screw (2), and turn tension controller assembly (3) clockwise to increase the stroke or counterclockwise to decrease it.

★ Adjusting the tension

Insert the blade of a flat-bit screwdriver into the groove in the tension post (4), and turn it clockwise to increase the tension or counterclockwise to decrease it.

(Caution) Decrease the tension of the thread take-up spring for a synthetic fiber thread.

17. ADJUSTING THE LENGTH AND WIDTH OF BAR-TACKING



WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

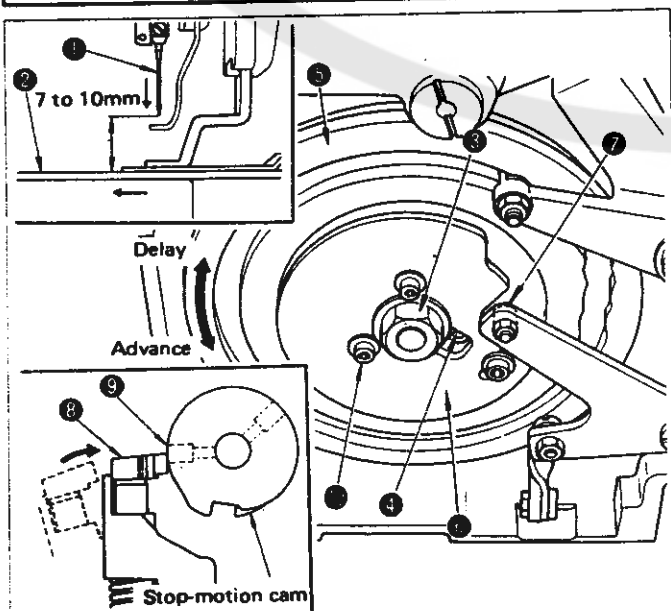
★ Adjusting the bartacking length

Push and open bed cover (A) (1) in the arrowed direction, and loosen nut (2). Move feed across regulator (3) towards you to increase the bartacking length or away from you to decrease it. After adjustment, tighten nut (2) and close bed cover (A) (1).

★ Adjusting the bartacking width

Push and open bed cover (B) (4) in the arrowed direction, and loosen nut (5). Move feed regulator (6) to the left to increase the bartacking width or to the right to decrease it. After adjustment, tighten nut (5) and close bed cover (B) (4).

18. ADJUSTING THE FEED TIMING



WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

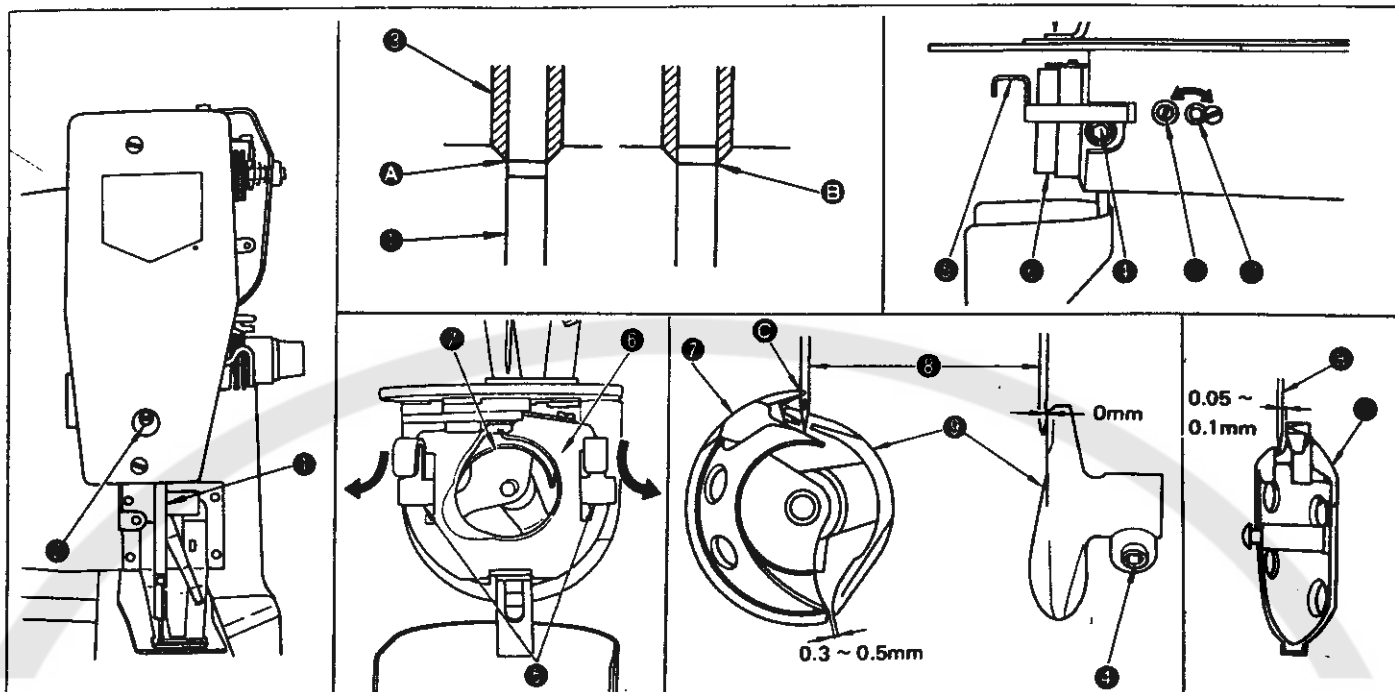
1. Raise the machine head. (See "4. Raising the machine head")
 2. Loosening hexagon nut (1) and socket screw (2), turn feed cam (3) to perform adjustment so that the material feed is completed at the moment the point of needle (4) has lowered to a height of 7 to 10mm above the surface of throat plate (5). Turning the feed cam clockwise will delay the completion of the material feed, and vice versa.
 3. After adjustment, securely tighten socket screw (4) and hexagon nut (1).
- ★ Better thread tension is obtained as the above-mentioned height is adjusted to about 7mm.
 - ★ If starting stitches formed are loose when using a synthetic fiber thread, adjust the above-mentioned height to about 10mm in order to prevent such trouble.
4. Stop-motion regulating cam (6) is turned together with feed cam (3). Therefore, loosen setscrew (7) and turn the stop-motion regulating cam to make adjustment so that stop-motion regulating cam roller (8) enters stop motion from the low-speed revolution when stop-motion hook (9) falls onto stop-motion cam screw No. 1 (10) at the final stitch.

19. NEEDLE-TO-SHUTTLE RELATION



WARNING :

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



(Adjusting the height of the needle bar)

1. Turn the changeover pulley by hand to bring needle bar ① to the lowest position of its stroke (see "To operate the sewing machine manually").
2. Remove the rubber cap, and loosen setscrew ②.
3. Turn the driving pulley by hand to make upper marker line ③ engraved on the needle bar meet the bottom end of lower bushing ④ of the needle bar. Tighten setscrew ②.

(Positioning the shuttle)

4. Further turn the driving pulley until lower marker line ⑤ engraved on needle bar ⑥ meets the bottom end of lower bushing ④ of the needle bar.
5. Loosen shuttle driver setscrew ⑦, and open shuttle race latches ⑧ to the right and left, respectively while pulling them towards you to remove shuttle race ring ⑨.

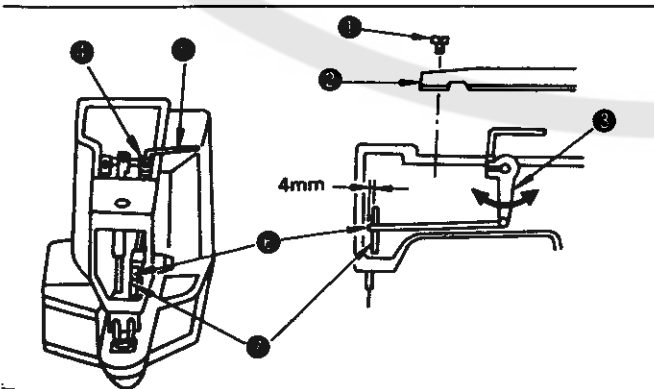
(Caution) At this time, be careful not to allow shuttle ⑩ to fall.

6. Perform adjustment so that no clearance is provided between the needle and the front end of shuttle driver ⑪ when the blade point of shuttle ⑩ is aligned with center ⑫ of needle ⑬. Then tighten shuttle driver setscrew ⑦.

(Caution) At this time, be very careful not to cause the shuttle race to slip in the direction of rotation.

7. Loosening setscrew ⑧, turn shuttle race adjusting shaft ⑨ clockwise or counterclockwise for adjustment to provide a 0.05 to 0.1 mm clearance between needle ⑬ and shuttle ⑩, then tighten setscrew ⑧.
8. After adjustment, install shuttle race ring ⑨.

20. ADJUSTING THE THREAD TENSION RELEASE TIMING



WARNING :

Carry out the following steps of procedure after the power switch has been turned OFF.

1. Remove five setscrews ① to take off top cover ②.
2. Loosen socket screw ③ of tension arm ④ by L-shaped wrench ⑤, and turn the tension arm to make adjustment so that a 4mm clearance is provided between the end of connecting rod ⑥ and that of tension post support plate ⑦ when the work clamp foot is up (when connecting rod ⑥ is retreated).
3. After adjustment, securely tighten socket screw ③.

21. ADJUSTING THE LIFT OF THE WORK CLAMP FOOT



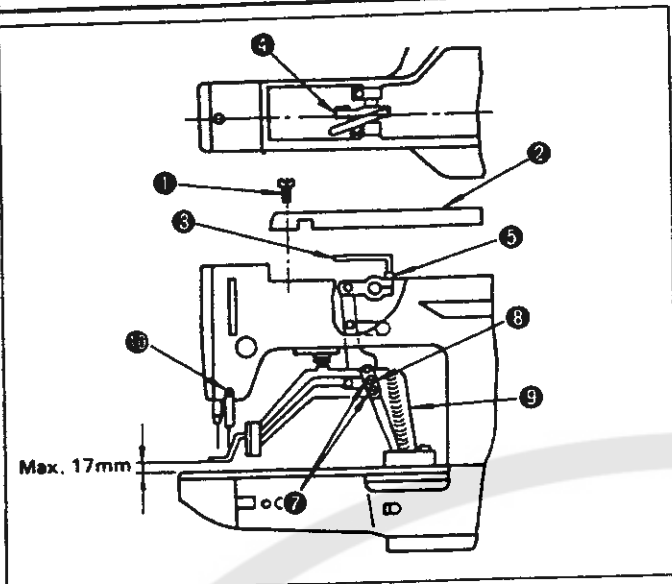
WARNING :
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

The lift of the work clamp foot can be adjusted up to 17mm.

1. With the machine in stop mode, remove five setscrews ① to take off top cover ②.
2. Apply L-shaped wrench ③ to socket screw ⑤ of clamp ④, and loosen socket screw.
3. Push down L-shaped wrench ③ to increase the lift of the work clamp foot, or pull it up to decrease the lift.
4. Securely tighten socket screw ⑤ after adjustment.
5. If the right and left work clamp feet are not levelled, loosen screw ⑦ and adjust the position of work clamp foot lever support plate ⑧ to level them.

(Caution) Be careful not to cause work clamp foot lever support plate ⑧ to interfere with feed bracket ⑨.

If the work clamp foot lever support plate interferes with the wiper, readjust the height of the wiper using setscrew ⑩.

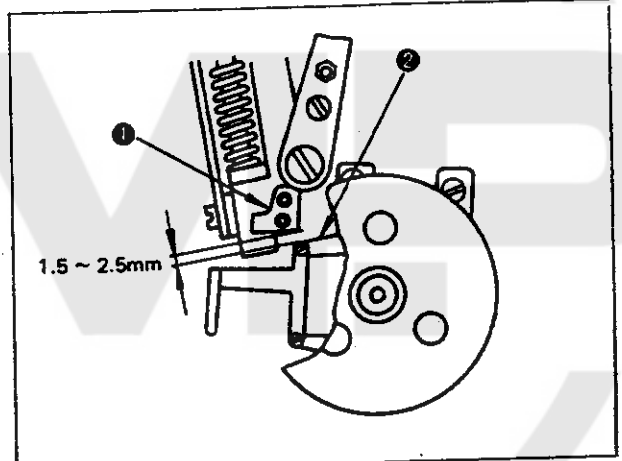
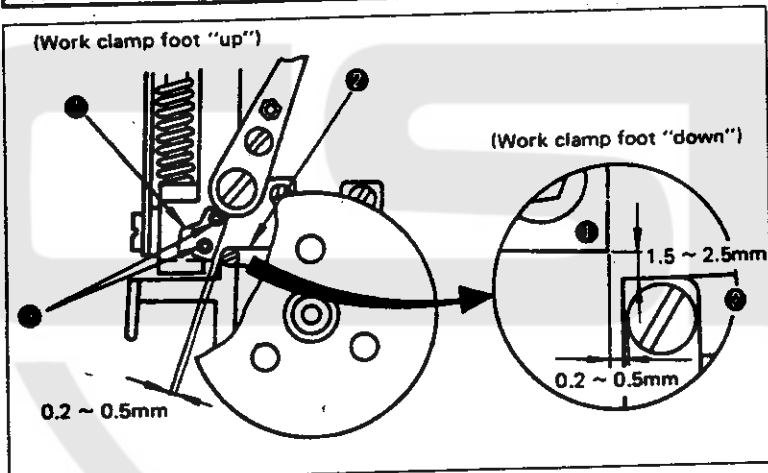


22. ADJUSTING THE SAFETY PLATE



WARNING :

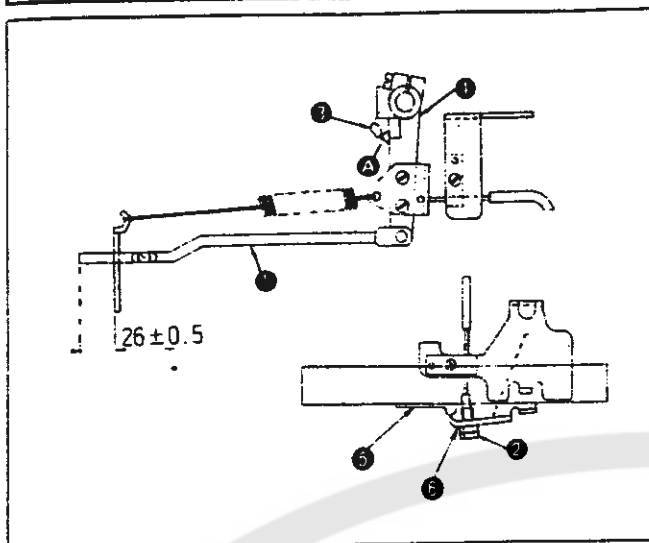
Carry out the following steps of procedure after the power switch has been turned OFF.



1. Loosening two setscrews ①, perform adjustment so that a 0.2 to 0.5mm lateral clearance is provided between safety plate ② and lifting lever ③ when the work clamp foot is up at the time of stop motion, and a 1.5 to 2.5mm longitudinal clearance between them when the work clamp foot is down.

2. Check that the longitudinal clearance between safety plate ② and lifting lever ③ is 1.5 to 2.5mm during the high-speed bar tacking (the work clamp foot is down).

23. ADJUSTING THE DISK FLOATING TIMING (For S-type only)

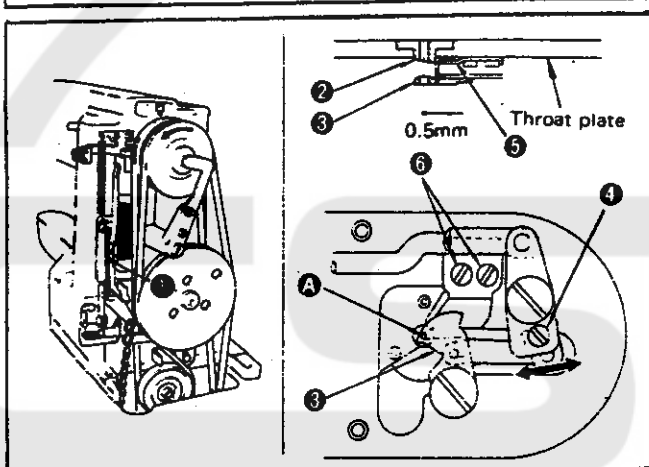


WARNING :

Carry out the following steps of procedure after the power switch has been turned OFF.

1. Confirm that the pawl section of thread release lever (2) rides completely the mound section of disk floating notch (3) when the machine is in the stop-motion state. At that time, adjust with nut (2) of the wire setting screw so that the protruding amount of tension release bar (1) becomes 26 ± 0.5 , and tighten it.
(For the disk floating timing, confirm that the disk starts floating from the state that the eyelet of the thread take-up lever has come nearly to the horizontal line when the thread take-up lever goes up at the last stitch.)
2. When the machine is in the stop-motion state (the work clamp feet are in the up-state.), adjust so that the clearance A between disk floating arm (3) and tension release arm (4) is 0 (zero) mm (lightly contact with each other.), and tighten the setscrew of the disk floating arm.
(However, the adjustment will vary to some extent according to the models.)

24. ADJUSTING THE THREAD TRIMMER

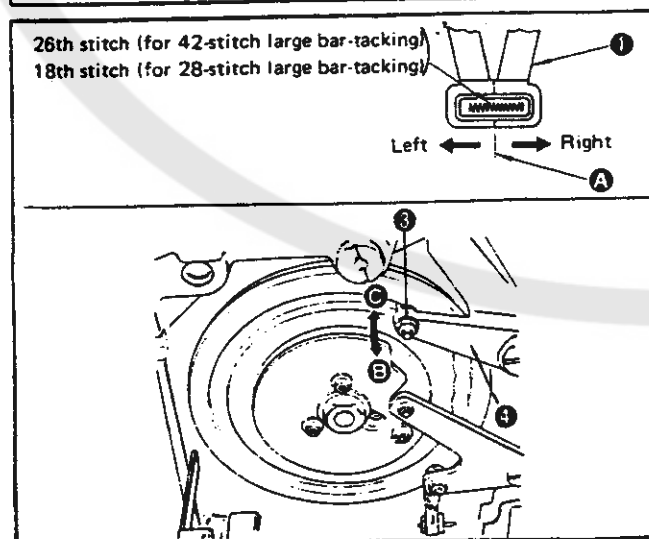


WARNING :

Carry out the following steps of procedure after the power switch has been turned OFF.

1. Remove starting lever tension spring (1), and start the machine. (The work clamp foot stays down when the machine stops.)
2. Loosen adjusting screw (4) and adjust the position of moving knife (3) in the arrowed direction to align hole (4) of the moving knife with the needle hole in needle hole guide (2).
3. Loosen setscrew (6) and adjust the position of counter knife (5) to provide a 0.5mm clearance between needle hole guide (2) and counter knife (5).

25. ADJUSTING THE LATERAL POSITION OF THE WORK CLAMP FOOT

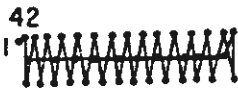
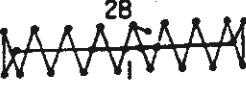


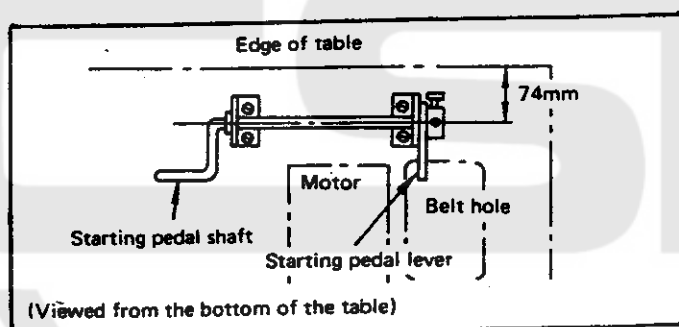
WARNING :

Carry out the following steps of procedure after the power switch has been turned OFF.

- Loosen nut (3), and move feed across regulator in direction (B) to shift lateral center (A) of work clamp foot (1) to the right or in direction (C) to shift it to the left.
- ★ For 42-stitch bar-tacking, adjust the lateral center at the 26th stitch.
 - ★ For 28-stitch bar-tacking, adjust the lateral center at the 18th stitch.
- (Caution) To correct a slight deviation of the lateral feed center, loosen the nut described in "19. Adjusting the length and width of bar tacking", and push the work clamp foot to the right or left by hand to make adjustment.

26. SPECIFICATIONS

	Standard	1850-42-M	1850-28-S
Model	1850-42-XL	1850-42-M	1850-28-S
Application	Large size bar tacking	←	←
Sewing speed (s.p.m.)	1800	1800	←
Stitching pattern			
Number of stitches	42	42	28
Bar tacking width (mm)	1.5 ~ 4	1.5 ~ 3	1.3 ~ 3 (standard 2.5)
Bar tacking length (mm)	8 ~ 16	8 ~ 16	4 ~ 8 (standard 6.5)
Needle	DPx 17 #20	DPx5 #16	DPx5 #11
Work clamp foot lift (mm)	Max. 17	Max. 17	Max. 17
Lubricating oil	New Defrix Oil	←	←



*1. The machine head of the band-loop attaching machine is installed sideways. See the figure at left and use the pedal shaft supplied with the machine for easier pedal operation.

- *2. For bar-tacking of 25 to 35mm length, use feed plate (part No. 13547005) and work clamp foot (part No. 13547112).
- *3. This model of bar-tacking machine is designed to make the work clamp feet automatically close from the right and left of an eyelet buttonhole (closing width adjustable from 0 to 4mm), thus preventing the button-hole from opening when bar-tacking the end of the eyelet buttonhole.
- ★ By replacing the pedal pressure decreasing unit (asm) (part No. 13523188) with the P-type pedal pressure decreasing unit (asm) (part No. 13545959), the work clamp foot lifting operation can be changed from the standard one-pedal system to two-pedal system.

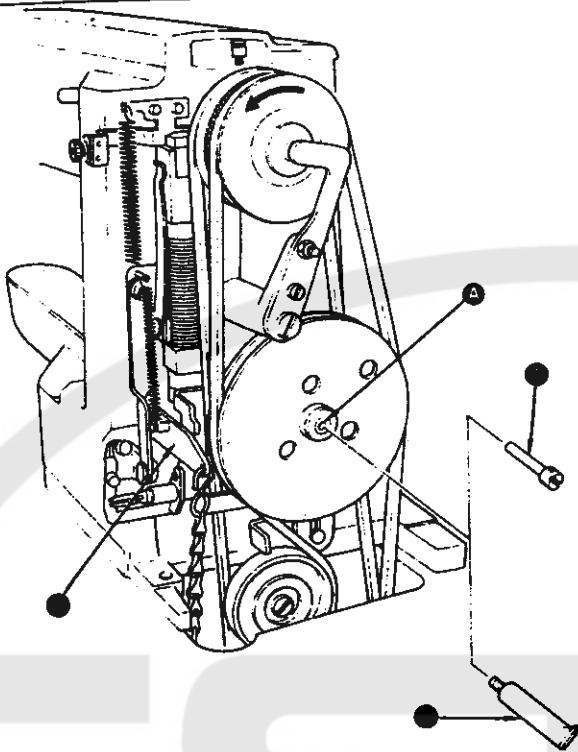
27. TROUBLES AND CORRECTIVE MEASURES

Trouble	Cause	Corrective measures	Page
1. The needle thread slips off the needle at the start of bar-tacking.	① Stitches are skipped at the start.	○ Adjust the clearance between the needle and the shuttle to 0.05 to 0.1 mm.	8
	② The needle thread remaining on the needle after thread trimming is too short.	○ Correct the thread tension release timing of the thread tension controller No. 2.	8
		○ Increase the tension of the thread take-up spring, or decrease the tension of the thread tension controller No. 1.	7
	③ The bobbin thread is too short.	○ Decrease the tension of the bobbin thread.	7
		○ Increase the clearance between the needle hole guide and the counter knife.	9
	④ The feed timing is bad.	○ Correct the feed timing.	7
2. Thread often breaks or synthetic fiber thread splits finely.	① The shuttle or the driver has scratches.	○ Take it out and remove the scratches using a fine whetstone or buff.	9
	② The needle hole guide has scratches.	○ Buff or replace it.	
	③ The needle strikes the work clamp foot.	○ Correct the position of the work clamp foot.	
	④ Fibrous dust is in the groove of the shuttle race.	○ Take out the shuttle and remove the fibrous dust from the shuttle race.	8
	⑤ The needle thread tension is too high.	○ Reduce the needle thread tension.	7
	⑥ The tension of the thread take-up spring is too high.	○ Reduce the tension.	7
	⑦ The synthetic fiber thread melts due to heat generated on the needle.	○ Use silicone oil.	4
3. The needle often breaks.	① The needle is bent.	○ Replace the bent needle.	5
	② The needle hits the work clamp foot.	○ Correct the position of the work clamp foot.	9
	③ The feed timing is bad.	○ Correct the feed timing.	7
	④ The needle is too thin for the material.	○ Replace it with a thicker needle according to the material.	5
	⑤ The driver excessively bends the needle.	○ Correctly position the needle and the shuttle.	8
4. Threads are not trimmed.	① The counter knife is dull.	○ Replace the counter knife.	9
	② The difference in level between the needle hole guide and the counter knife is not enough.	○ Increase the bend of the counter knife.	9
	③ The moving knife has been improperly positioned.	○ Correct the position of the moving knife.	9
	④ The last stitch is skipped.	○ Correct the timing between the needle and the shuttle.	8
5. Stitch skipping often occurs.	① The motions of the needle and shuttle are not properly synchronized.	○ Correct the positions of the needle and shuttle.	8
	② The clearance between the needle and shuttle is too large.	○ Correct the positions of the needle and shuttle.	8
	③ The needle is bent.	○ Replace the bent needle.	5
	④ The feed timing is bad.	○ Correct the feed timing.	7
	⑤ The driver excessively bends the needle.	○ Correctly position the driver.	8
6. The needle thread comes out on the wrong side of the material.	① The needle thread tension is not high enough.	○ Increase the needle thread tension.	7
	② The tension release mechanism fails to work properly.	○ Check whether or not the tension disc No. 2 is released during bar-tacking.	8
	③ The needle thread after thread trimming is too long.	○ Increase the tension of the thread tension controller No. 1.	7
7. Threads break at time of thread trimming.	① The moving knife has been improperly positioned.	○ Correct the position of the moving knife.	9

28. HOW TO SUPPLY GREASE TO THE BALL BEARING



WARNING :
Carry out the following steps of procedure after the power switch has been turned OFF.



-Supply grease to the reducer in accordance with the following procedure when the machine has been used for more than half year or if it chatters.

1. Stop the machine and remove screw ●.
2. Uncap grease tube ● supplied with the machine, screw the tube into hole A, and push the grease out of the tube.
3. Removing grease tube ● from B, push in the grease by screw ●.
4. Repeat the step of injecting the grease and pushing it in by the screw twice or so.
5. Tighten screw ●.

5. Tighten screw ●.

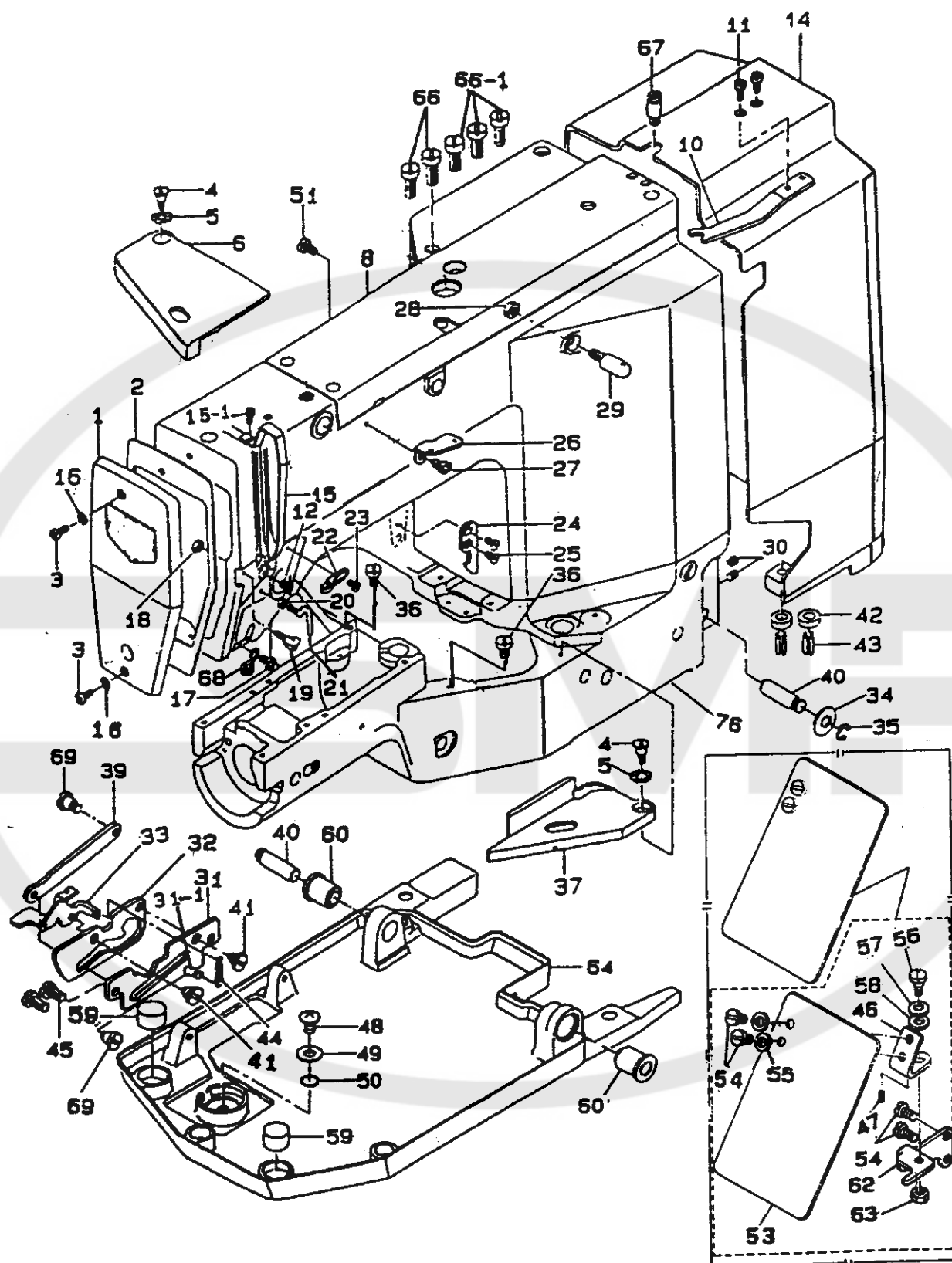
(Caution) If the grease will not get into the unit smoothly, screw in grease tube ●, turn on the motor switch, and move the presser foot up and down two or three times using lever ●. By doing this, you can make the grease get into the unit easily.

1850 BAR TACKING MACHINE

*** WHEN ALL OF SCREW [WITH RED MARK] WERE LOOSED AND WILL BE INSTALLED AGAIN. PLEASE ERASE LOCTITE#271 THREADLOCKER ON THIS SCREW AND LOCK COMPLETELY WHICH WILL PREVENT LOOSING.**

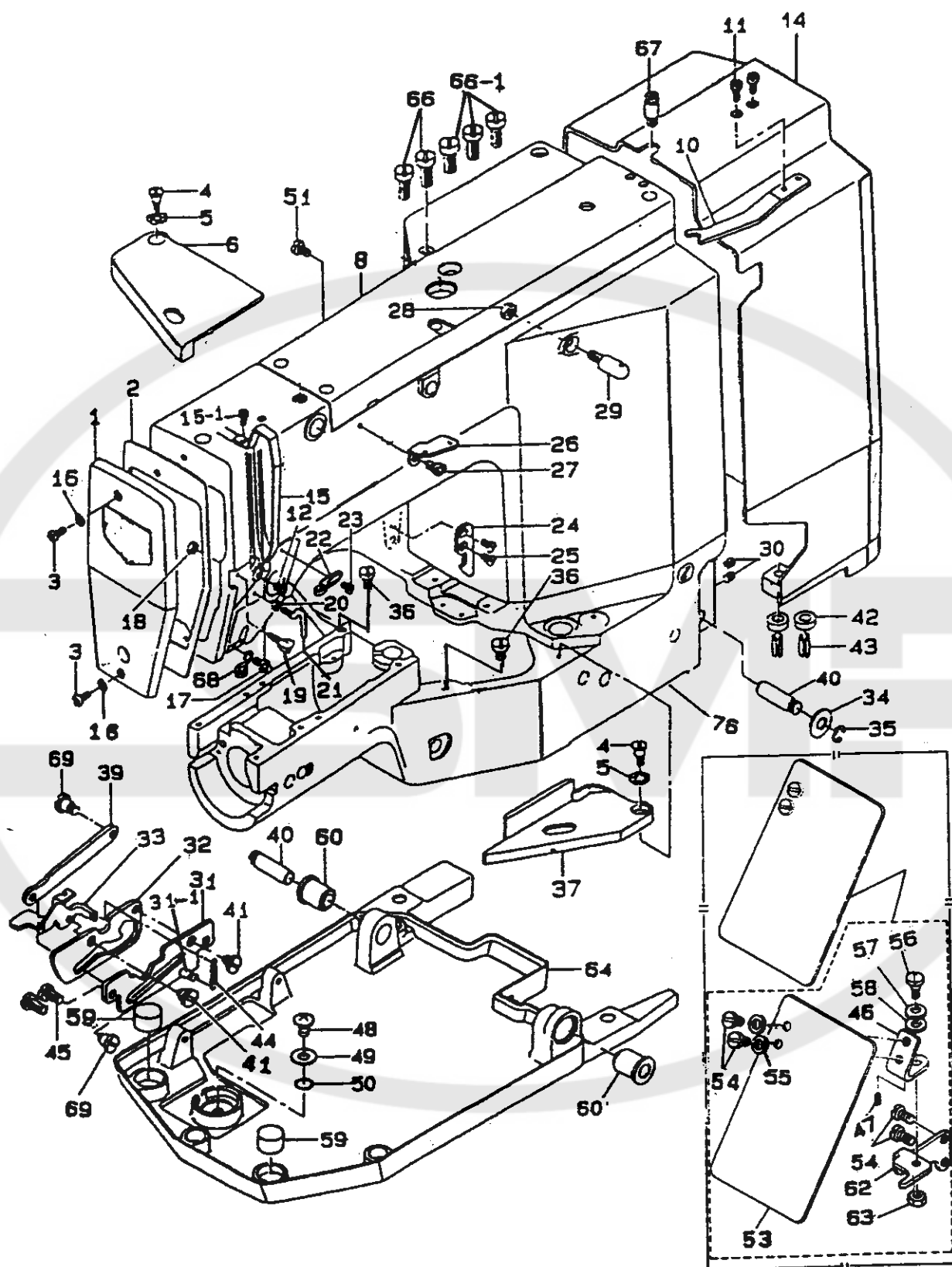
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- 1 .E1- FRAME & MISCELLANEOUS COVER COMPONENTS .
- 2 .E2- MAIN SHAFT COMPONENTS .
- 3 .E3- NEEDLE BAR COMPONENTS .
- 4 .E4- THREAD TENSION RELEASE COMPONENTS .
- 5 .E5- SHUTTLE DRIVER SHAFT COMPONENTS .
- 6 .E6- FEED MECHANISM COMPONENTS .
- 7 .E7- THREAD TRIMMING COMPONENTS .
- 8 .E8- PEDAL PRESSURE DECREASING UNIT COMPONENTS .
- 9 .E9- STOP-MOTION MECHANISM COMPONENTS .
- 1 0 .E10- LUBRICATION MECHANISM COMPONENTS .
- 1 1 .E11- ACCESSORIES .



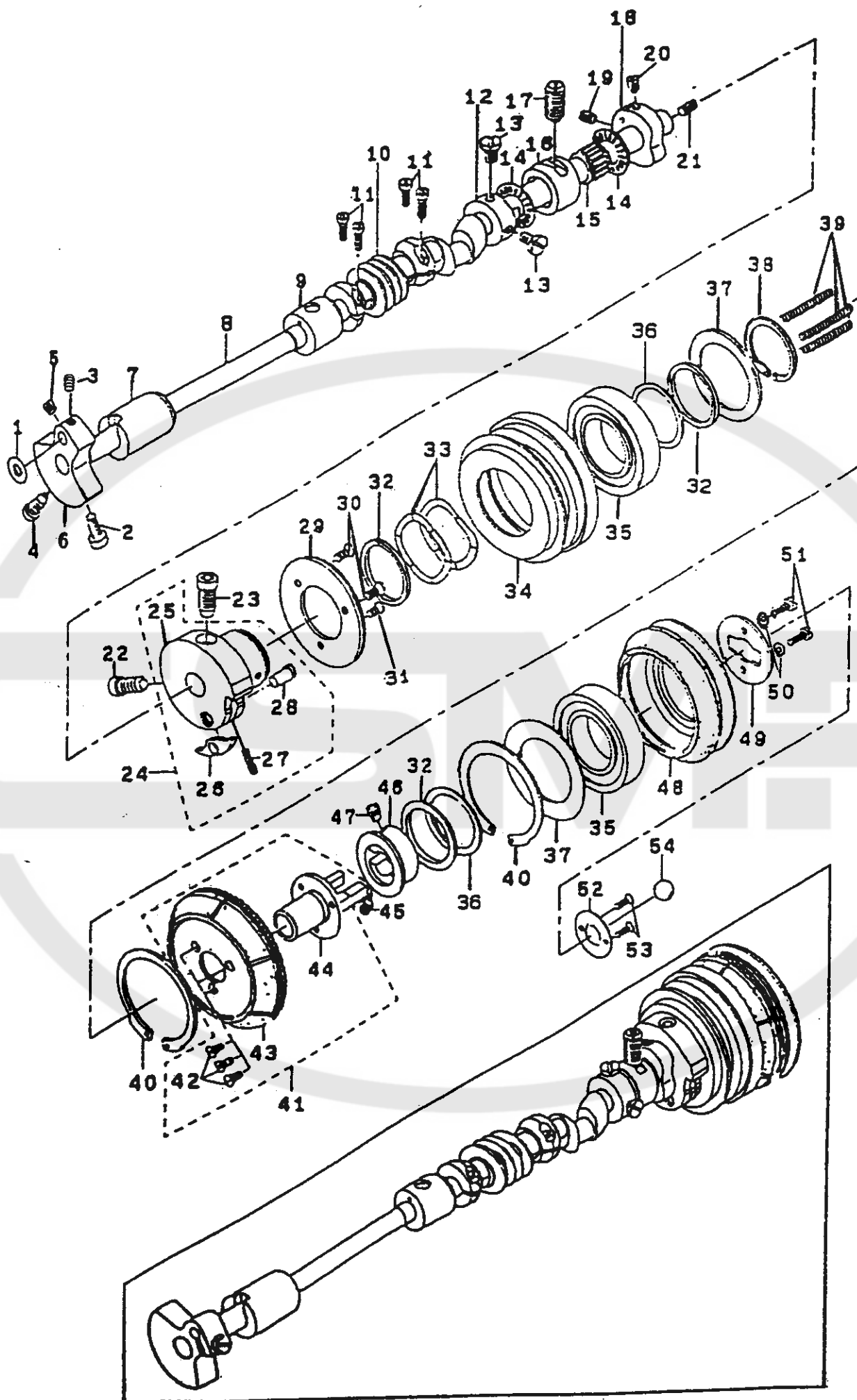
FRAME & MISCELLANEOUS COVER COMPONENTS

REF. NO.	DESCRIPTION	QTY
E 1 - 0 1	FACE PLATE ASM	
E 1 - 0 2	FACE PACKING	
E 1 - 0 3 F	SCREW 11/64-40	2
E 1 - 0 4 F	HINGE SCREW	2
E 1 - 0 5	WAVED WASHER 6.4*11*0.3	2
E 1 - 0 6	BED COVER B	
E 1 - 0 8	TOP COVER	
E 1 - 1 0	BELT COVER FIXING PLATE	
E 1 - 1 1 F	SCREW 11/64-40	2
E 1 - 1 2 F	SCREW 9/64-40	2
E 1 - 1 4	BELT COVER	
E 1 - 1 5	THREAD TAKE-UP LEVER OIL GAURD	
E 1 - 15-1F	SCREW 9/64-40	
E 1 - 1 6	WASHER 4.8*8.4*0.8	2
E 1 - 1 7 F	SCREW 11/64-40	
E 1 - 1 8 H	NUT 9/64-40	
E 1 - 1 9	THREAD GUIDE	
E 1 - 2 0 H	NUT 9/64-40	
E 1 - 2 1	L-SHAPED THREAD GUIDE A	
E 1 - 2 2	ARM THREAD GUIDE A	
E 1 - 2 3 F	SCREW 9/64-40	
E 1 - 2 4	BED FITTING HOOK	
E 1 - 2 5 F	SCREW 11/64-40	2
E 1 - 2 6	THREAD GUIDE PLATE	
E 1 - 2 7 F	SCREW 15/64-28	
E 1 - 2 8 H	NUT 15/64-28	
E 1 - 2 9 F	FIRST THREAD GUIDE	
E 1 - 3 0 F	SCREW 15/64-28	2
E 1 - 3 1	STAY GUIDE ASM.	
E 1 - 31-1	PIN	
E 1 - 3 2	DTAY ROCKER	
E 1 - 3 3	BED ROCKER	
E 1 - 3 4	WASHER 10.5*18*2	
E 1 - 3 5	E-RING	
E 1 - 3 6 F	SCREW 15/64-28	2
E 1 - 3 7	BED COVER A	



FRAME & MISCELLANEOUS COVER COMPONENTS

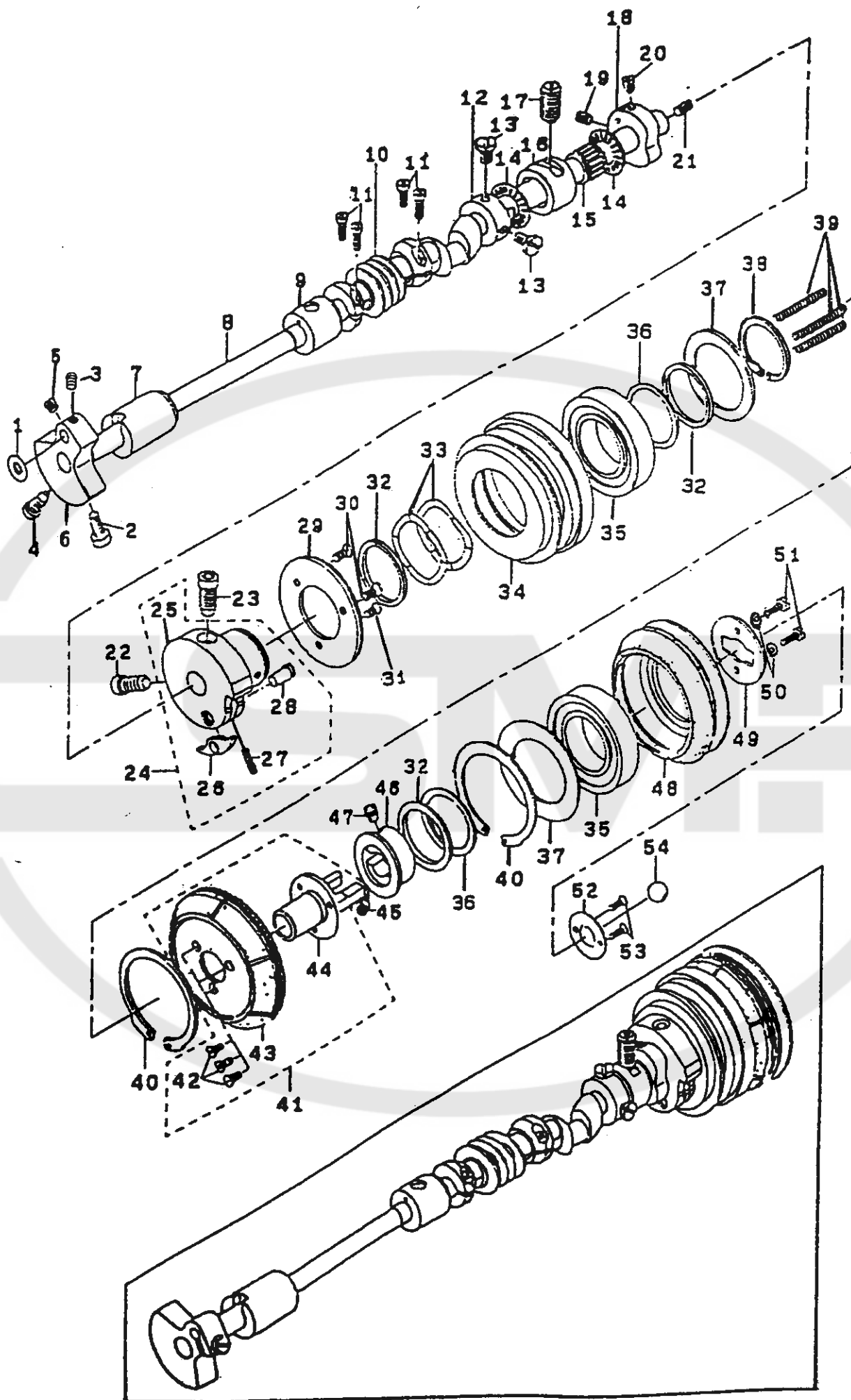
REF. NO.	DESCRIPTION	QTY
E 1 - 3 9	STAY	
E 1 - 4 0	BASE CONNVTING PIN	2
E 1 - 4 1 F	HINGE SCREW	2
E 1 - 4 2	RUBBER WASHER	2
E 1 - 4 3	SPRING PIN 8*20	2
E 1 - 4 4	THREADD TENSION SPRING	
E 1 - 4 5 F	SCREW 15/64-28	2
E 1 - 4 6	SAFETY PLATE INSTALLING PLATE	
E 1 - 4 7	STOPPER PIN	
E 1 - 4 8 F	SCREW	
E 1 - 4 9	WASHER	
E 1 - 5 0	RUBBER RING	
E 1 - 5 1 F	SCREW 11/64-40	
E 1 - 5 3	SAFETY PLATE	
E 1 - 5 4 F	SCREW 11/64-40	4
E 1 - 5 5	WASHER 4.5*10*0.8	2
E 1 - 5 6 F	HINGE SCREW	
E 1 - 5 7	DISK SPRING	
E 1 - 5 8	WASHER 6.5*13*0.8	
E 1 - 5 9	VIBRATION-PROOF RUBBER	2
E 1 - 6 0	RUBBER BUSH	2
E 1 - 6 2	SAFETY PLATE MOUNTING BASE	
E 1 - 6 3 H	NUT 3/16-32	
E 1 - 6 4	BED FITTING BASE	
E 1 - 6 6 F	SCREW 15/64-28	2
E 1 - 66-1F	SCREW 15/64-28	3
E 1 - 6 7 F	SPRING RACK	
E 1 - 6 8	ARM THREAD GUIDE B	
E 1 - 6 9 F	HINGE SCREW	2
E 1 - 7 6	MACHINE FRAME UNIT	



E2

MAIN SHAFT COMPONENTS

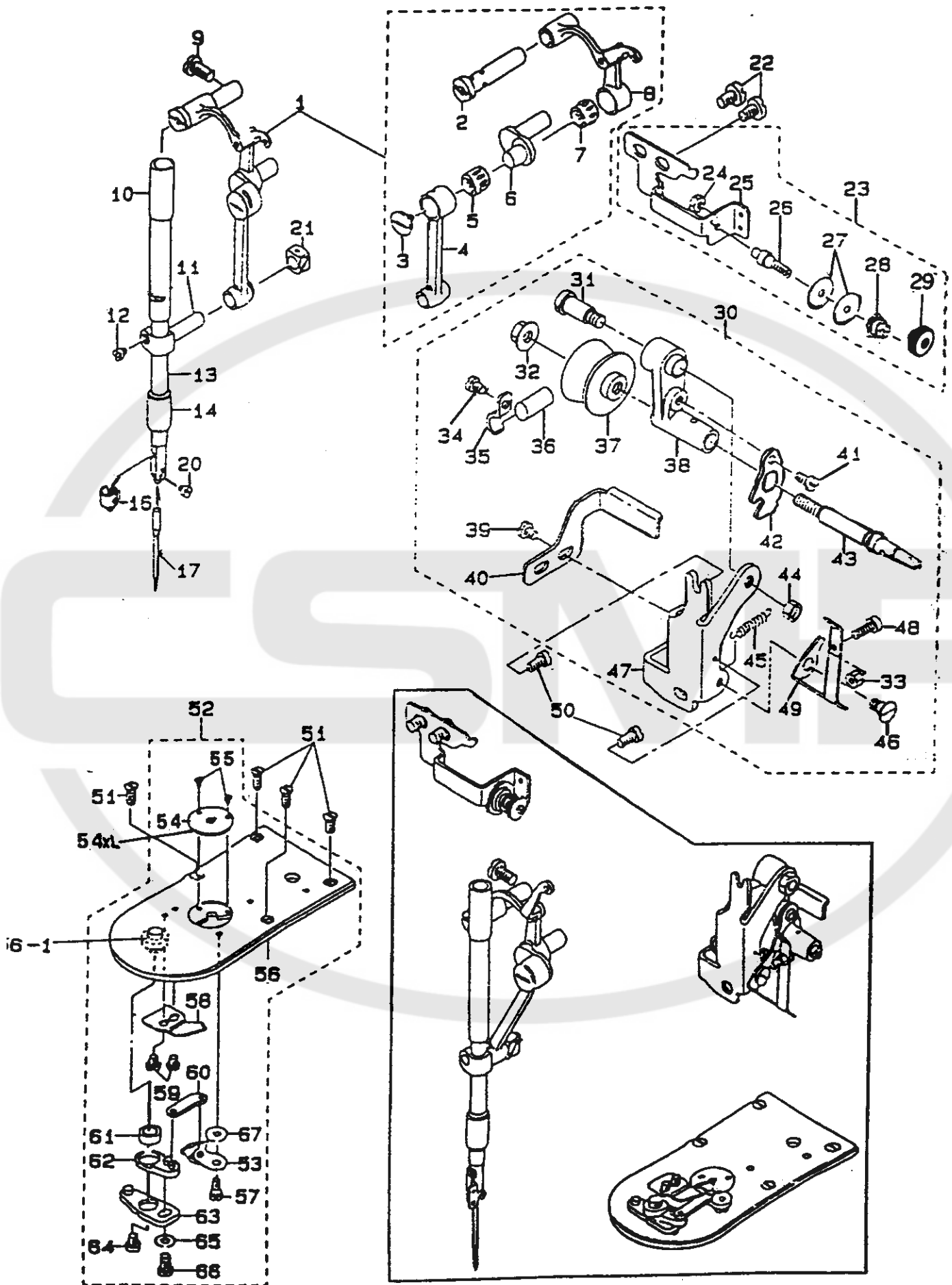
REF. NO.	DESCRIPTION	QTY
E 2 - 0 1	NEEDLE ROD CRANK WASHER	
E 2 - 0 2 F	SCREW 15/64-28	
E 2 - 0 3 F	SCREW 1/4-40	
E 2 - 0 4 F	SCREW 9/32-28	
E 2 - 0 5 F	SCREW 1/4-40	
E 2 - 0 6	COUNTER WEIGHT	
E 2 - 0 7	UPPER SHAFT FRONT METAL	
E 2 - 0 8	MAIN SHAFT	
E 2 - 0 9	UPPER SHAFT INNER METAL	
E 2 - 1 0	WORM ASM.	
E 2 - 1 1 F	SCREW 11/64-40	4
E 2 - 1 2	THRUST COLLAR ASM.	
E 2 - 1 3 F	SCREW 1/4-40	2
E 2 - 1 4	UPPER SHAFT THRUST BEARING	2
E 2 - 1 5	MAIN SHAFT NEEDLE BEARING B	
E 2 - 1 6	UPPER SHAFT REAR METAL	
E 2 - 1 7 F	SET SCREW	
E 2 - 1 8	THREAD CUTTING CUM ASM.	
E 2 - 1 9 F	SCREW 1/4-40	
E 2 - 2 0 F	SCREW 1/4-40	
E 2 - 2 1 F	SCREW 15/64-28	
E 2 - 2 2 F	SCREW 3/8-28	
E 2 - 2 3 F	SCREW 3/8-28	
E 2 - 2 5	STOP-MOTION CAM	
E 2 - 2 6	STOP MOTION CAM LATCH	
E 2 - 2 7	SAFETY PLATE STOPPER SPRING	



E2

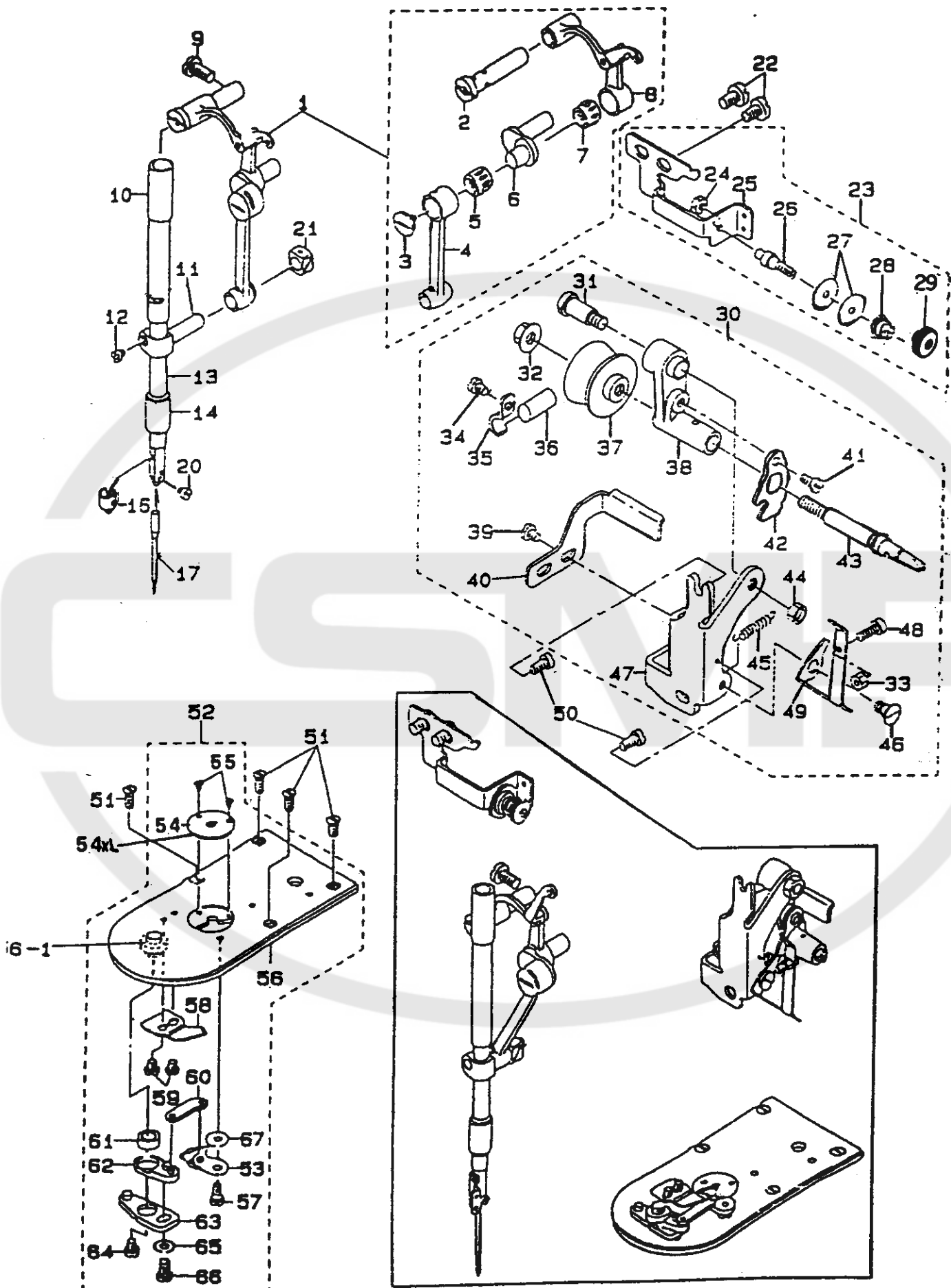
MAIN SHAFT COMPONENTS

REF. NO.	DESCRIPTION	QTY
E 2 - 2 8	PIN	
E 2 - 2 9	HIGH SPEED CLUTCH PLATE ASM.	
E 2 - 3 0 F	SCREW 11/64-40	2
E 2 - 3 1 F	SCREW 11/64-40	
E 2 - 3 2	SPACER	3
E 2 - 3 3	SPRING	2
E 2 - 3 4	HIGH SPEED PULLEY	
E 2 - 3 5	BEARING	2
E 2 - 3 6	SHIM	6
E 2 - 3 7	WASHER	2
E 2 - 3 8	RETAINING RING 32.2	
E 2 - 3 9	SLOW SPEED PULLEY SPRING	3
E 2 - 4 0	RETAINING RING 66.2	2
E 2 - 4 2 F	SCREW 11/64-40	3
E 2 - 4 3	PULLEY	
E 2 - 4 4	PULLEY SHAFT	
E 2 - 4 5 F	SCREW 1/4-40	
E 2 - 4 6	SLOW SPEED PULLEY SHAFT	
E 2 - 4 7 F	SCREW 1/4-40	
E 2 - 4 8	SLOW SPEED PULLEY	
E 2 - 4 9	SLOW SPEED PULLEY PLATE	
E 2 - 5 0	SPRING WASHER 4.5*8.5*1	2
E 2 - 5 1 F	SCREW 11/64-40	2
E 2 - 5 2	BALL RETAINER	
E 2 - 5 3 F	SCREW 9/64-40	2
E 2 - 5 4	STOP-MOTION BALL	



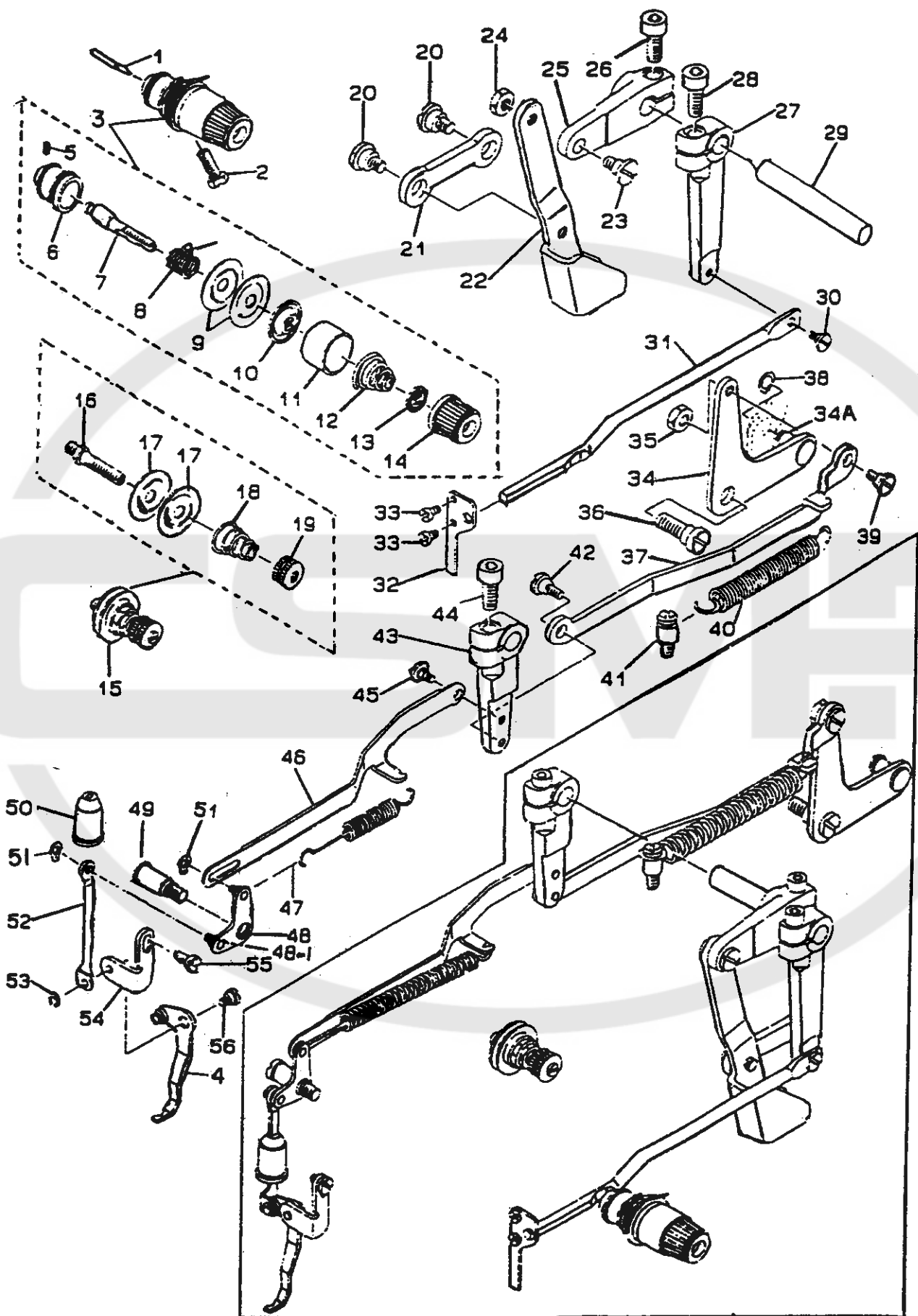
NEEDLE BAR COMPONENTS

REF. NO.	DESCRIPTION	QTY
E 3 - 0 1	LINK BALANCE ASM.	
E 3 - 0 2	BALANCE CRANK PIN	
E 3 - 0 3 F	LEFT SCREW	
E 3 - 0 4	NEEDLE BAR CRANK ROD	
E 3 - 0 5	NEEDLE DRIVING LEVER BEARING C	
E 3 - 0 6	NEEDLE ROD CRANK	
E 3 - 0 7	NEEDLE BEARING	
E 3 - 0 8	BALANCE ASM.	
E 3 - 0 9 F	SCREW 15/64-28	
E 3 - 1 0	NEEDLE ROD METAL	
E 3 - 1 1	NEEDLE ROD HOLDER ASM.	
E 3 - 1 2 F	SCREW 9/64-40	
E 3 - 1 3	NEEDLE BAR	
E 3 - 1 4	NEEDLE ROD LOWER METAL	
E 3 - 1 6	NEEDLE BAR THREAD GUIDE	
E 3 - 1 7	NEEDLE	
E 3 - 2 0 F	SCREW 1/8-44	
E 3 - 2 1	SQUARE BLOCK	
E 3 - 2 2 F	SCREW 15/64-28	2
E 3 - 2 4 H	NUT 11/64-40	
E 3 - 2 5	THREAD GUIDE BRACKET	
E 3 - 2 6	BOBBIN WINDER TENSION POST	
E 3 - 2 7	BOBBIN WINDER TENSION DISC	2
E 3 - 2 8	BOBBIN WINDER TENSION SPRING	
E 3 - 2 9	NUT	
E 3 - 3 1	HINGE SCREW	
E 3 - 3 2 H	NUT	
E 3 - 3 3 H	NUT 11/64-40	
E 3 - 3 4 F	SCREW 11/64-40	
E 3 - 3 5	BOBBIN WINDER BRAKE PRESSURE P	
E 3 - 3 6	BOBBIN WINDER BRAKE	
E 3 - 3 7	BOBBIN WINDER WHEEL	
E 3 - 3 8	BOBBIN WINDER SPINDLE BUSHING	



NEEDLE BAR COMPONENTS

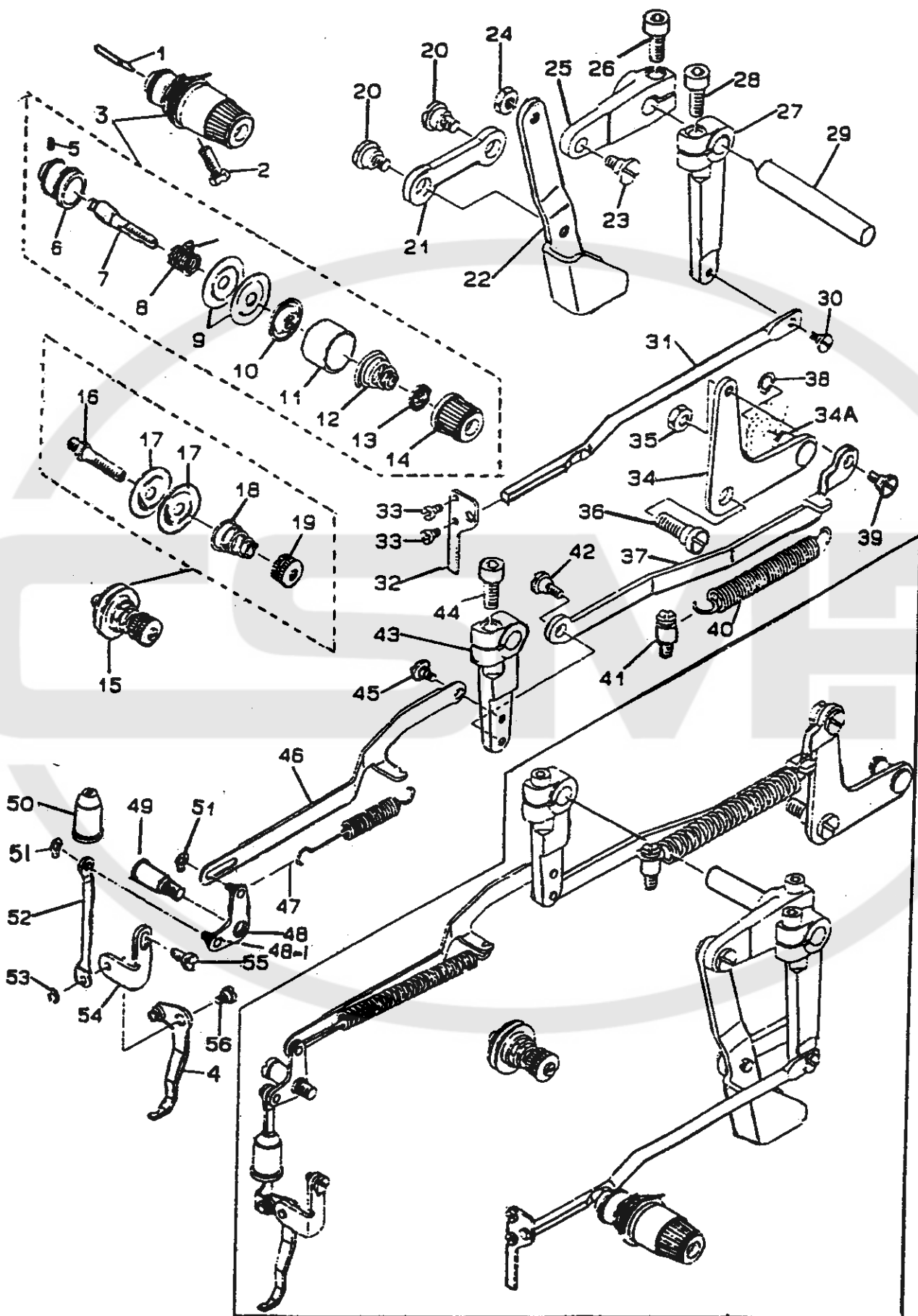
REF. NO.	DESCRIPTION	QTY
E 3 - 3 9 F	SCREW 11/64-40	
E 3 - 4 0	BOBBIN WINDER BELT SUPPORT	
E 3 - 4 1 F	SCREW 11/64-40	
E 3 - 4 2	BOBBIN WINDER TRIP LATCH	
E 3 - 4 3	BOBBIN WINDER SHAFT	
E 3 - 4 4 H	NUT 15/64-28	
E 3 - 4 5	SPRING	
E 3 - 4 6 F	HINGE SCREW	
E 3 - 4 7	BOBBIN WINDER BASE	
E 3 - 4 8 F	BOBBIN WINDER ADJUSTING SCREW	
E 3 - 4 9	BOBBIN WINDER TRIP LATCH	
E 3 - 5 0 F	SCREW 11/64-40	2
E 3 - 5 1 F	SCREW 11/64-40	4
E 3 - 5 3	MOVING KNIFE ASM.	
E 3 - 5 4	NEEDLE HOLE GUID	
E 3 - 5 4 XL	NEEDLE HOLE GUID (G)	
E 3 - 5 5 F	SCREW 3/32-56	2
E 3 - 5 6	NEEDLE PLATE ASM.	
E 3 - 56-1 F	SCREW 11/64-40	
E 3 - 5 7 F	HINGE SCREW	
E 3 - 5 8	FIXING KNIFE	
E 3 - 5 9 F	SCREW 9/64-40	2
E 3 - 6 0	MOVING KNIFE LINK	
E 3 - 6 1	THREAD CUTTING LEVER RING	
E 3 - 6 2	THREAD CUTTING LEVER SMALL	
E 3 - 6 3	THREAD CUTTER LEVER ASM., LARG	
E 3 - 6 4 F	SCREW 11/64-40	
E 3 - 6 5	WASHER	
E 3 - 6 6 F	SCREW 11/64-40	
E 3 - 6 7	MOVING KNIFE WASHER C	



E4

THREAD TENSION RELEASE COMPONENTS

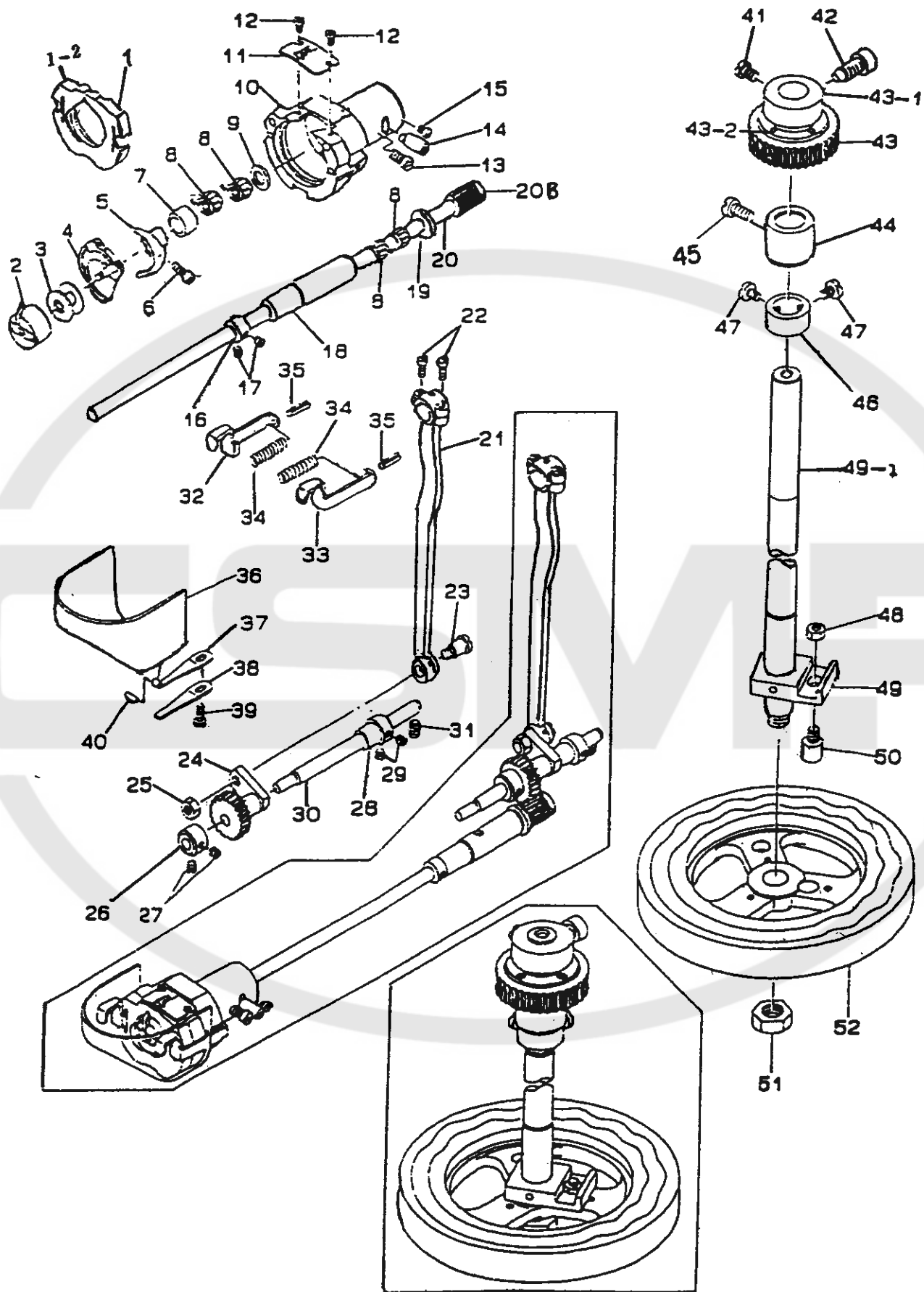
REF. NO.	DESCRIPTION	QTY
E 4 - 0 1	TENSION RELEASE PIN	
E 4 - 0 2 F	SCREW 15/64-28	
E 4 - 0 3	SECOND THREAD TENSION ASM.	
E 4 - 0 4	WIPER ASM.	
E 4 - 0 5 F	SCREW 9/64-40	
E 4 - 0 6	THREAD TENSION ROD, LARGE	
E 4 - 0 7	SECOND THREAD TENSION ROD	
E 4 - 0 8	THREAD TAKE-UP SPRING	
E 4 - 0 9	THREAD TENSION DISK	2
E 4 - 1 0	THREAD TENSION DISK PRESSER	
E 4 - 1 1	THREAD TENSION DISK PRESSER	
E 4 - 1 2	THREAD TENSION SPRING	
E 4 - 1 3	ROTATING STOPPER	
E 4 - 1 4	THREAD TENSION NUT	
E 4 - 1 5	FIRST THREAD TENSION ASM.	
E 4 - 1 6	THREAD TENSION ROD	
E 4 - 1 7	THREAD TENSION DISK	2
E 4 - 1 8	FIRST THREAD TENSION SPRING	
E 4 - 1 9	THREAD TENSION NUT	
E 4 - 2 0 F	HINGE SCREW	2
E 4 - 2 1	CONNECTING LINK	
E 4 - 2 2	LOWERING FOOT	
E 4 - 2 3 F	HINGE SCREW	
E 4 - 2 4 H	NUT 15/64-28	
E 4 - 2 5	LOWERING ARM	
E 4 - 2 6 F	SCREW 15/64-28	
E 4 - 2 7	TENSION RELEASE ARM	
E 4 - 2 8 F	SCREW 15/64-28	
E 4 - 2 9	SHAFT	



E4

THREAD TENSION RELEASE COMPONENTS

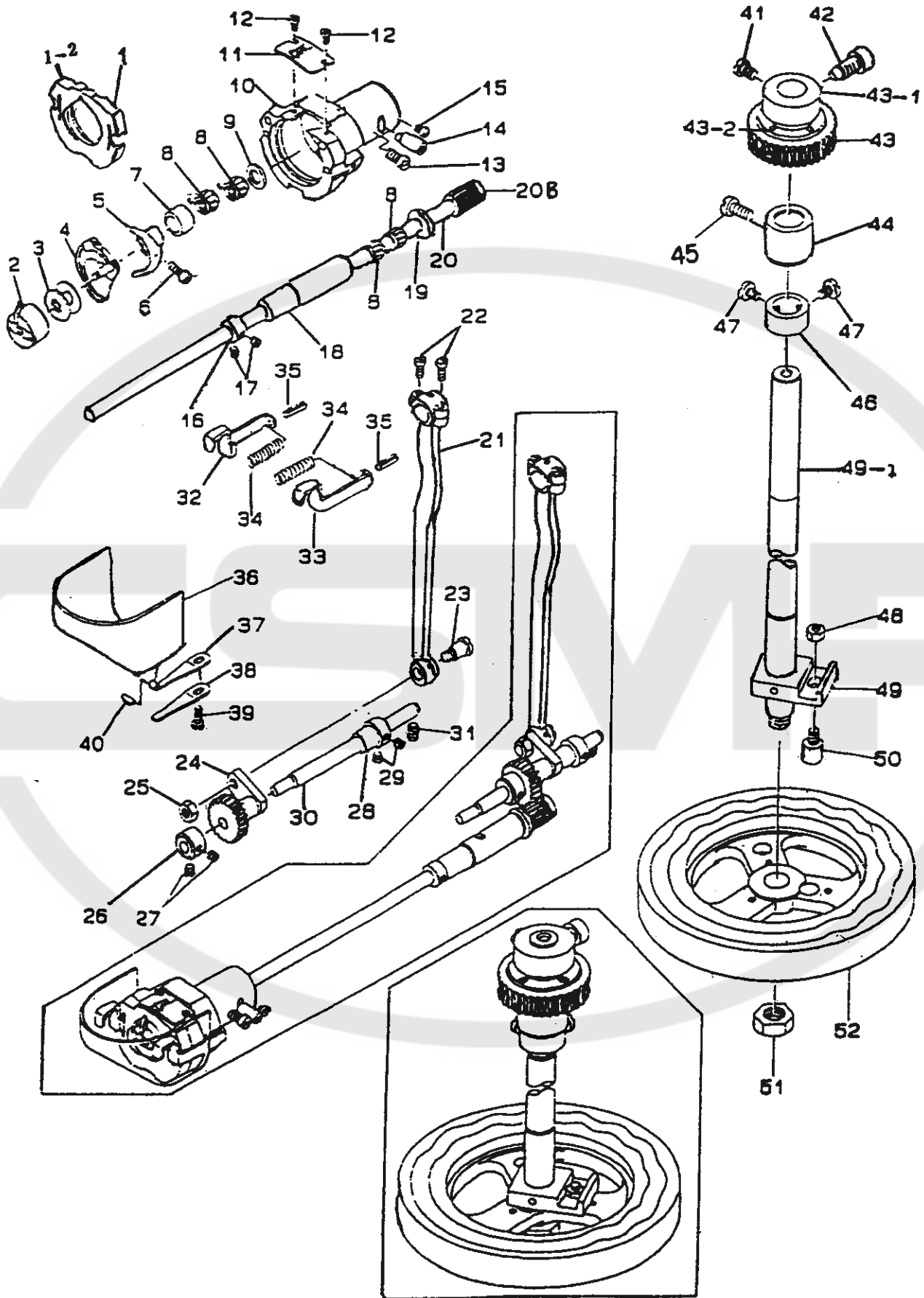
REF. NO.	DESCRIPTION	QTY
E 4 - 3 0 F	HINGE SCREW	
E 4 - 3 1	TENSION RELEASE BAR	
E 4 - 3 2	THREAD TENSION ARM	
E 4 - 3 3 F	SCREW 9/64-40	2
E 4 - 3 4	LOWERING CONNECTING LEVER ASM.	
E 4 - 3 4 A	PIN	
E 4 - 3 5 H	NUT 15/64-28	
E 4 - 3 6 F	HINGE SCREW	
E 4 - 3 7	LOWERING CONNECTING RING	
E 4 - 3 8	C-RING	
E 4 - 3 9 F	HINGE SCREW	
E 4 - 4 0	TENSION SPRING	
E 4 - 4 1 F	SPRING PACK	
E 4 - 4 2 F	HINGE SCREW	
E 4 - 4 3	CONNECTING ARM	
E 4 - 4 4 F	SCREW 15/64-28	
E 4 - 4 5 F	HINGE SCREW	
E 4 - 4 6	WIPER CONNECTING LINK	
E 4 - 4 7	SPRING	
E 4 - 4 8	WIPER CONNECTING ARM ASM.	
E 4 - 48-1	PIN	
E 4 - 4 9 F	WIPER CONNECTING SCREW	
E 4 - 5 0	OIL SHIELD CAP	
E 4 - 5 1	RING	2
E 4 - 5 2	WIPER CONNECTING PLATE	
E 4 - 5 3	SNAP RING	
E 4 - 5 4	WIPER INSTALLING PLATE	
E 4 - 5 5 F	SCREW 11/64-40	
E 4 - 5 6 F	HINGE SCREW	



E5

SHUTTLE DRIVER SHAFT COMPONENTS

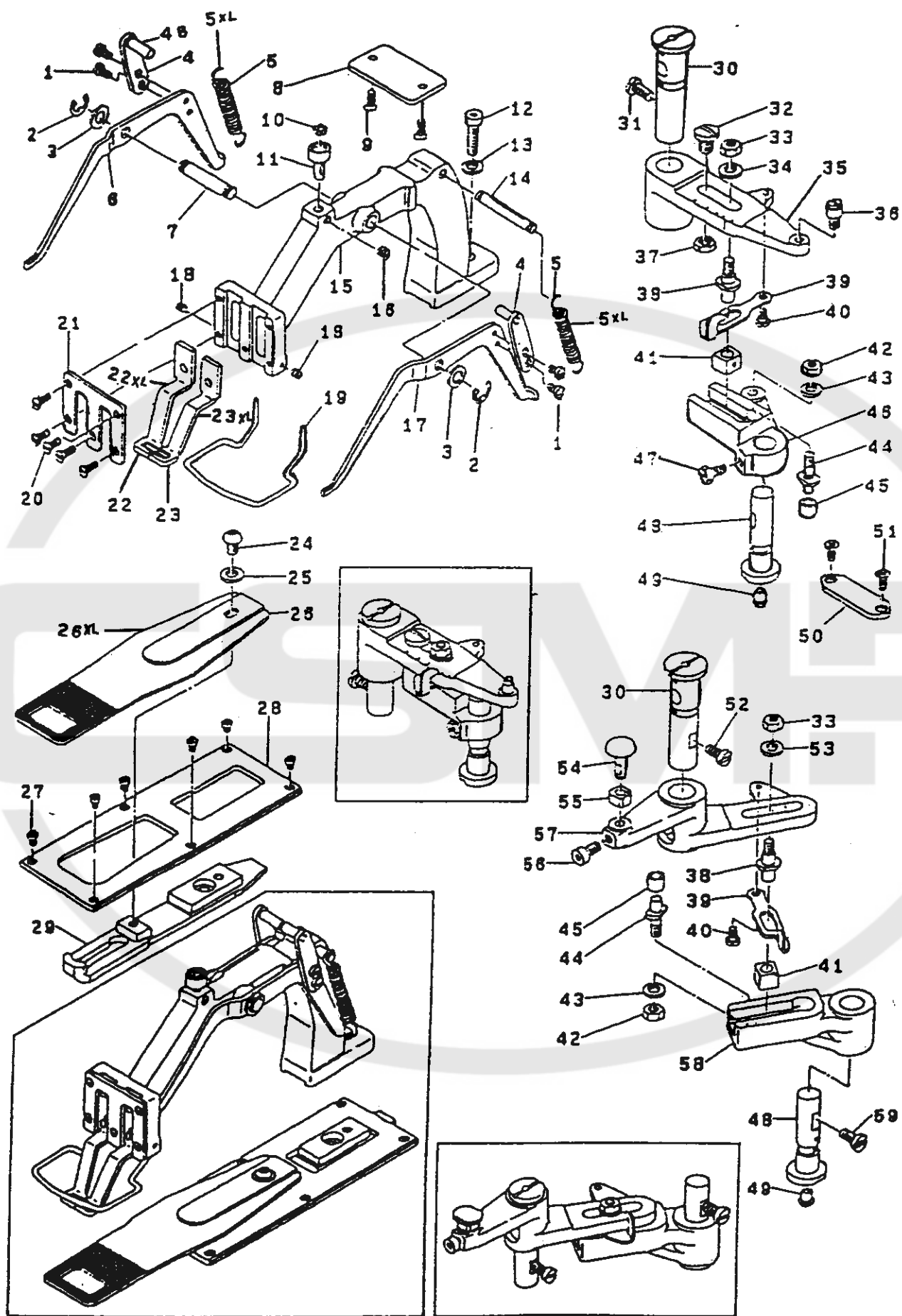
REF. NO.	DESCRIPTION	QTY
E 5 - 0 1	INNER HOOK PRESSER ASM.	
E 5 - 1 - 2	PIN	2
E 5 - 0 2	BOBBIN CASE ASM.	
E 5 - 0 3	BOBBIN	
E 5 - 0 4	INNER HOOK	
E 5 - 0 5	DRIVER ASM.	
E 5 - 0 6 F	SCREW 3/16-28	
E 5 - 0 7	SHUTTLE NEEDLE OUTER RING	
E 5 - 0 8	NEEDLE DRIVING LEVER BEARING B	4
E 5 - 0 9	WASHER 9.5*14.8*2.6	
E 5 - 1 0	SHUTTLE	
E 5 - 1 1	SHUTTLE UPPER SPRING	
E 5 - 1 2 F	SCREW 3/32-56	2
E 5 - 1 3 F	SCREW 15/64-28	
E 5 - 1 4	SHUTTLE RACE ADJUSTING SHAFT	
E 5 - 1 5 F	SCREW 11/64-40	
E 5 - 1 6	THRUST COLLAR ASM.	
E 5 - 1 7 F	SCREW 11/64-40	2
E 5 - 1 8	LOWER SHAFT REAR METAL	
E 5 - 1 9	LOWER SHAFT THRUST WASHER	
E 5 - 2 0	LOWER SHAFT GEAR A ASM.	
E 5 - 2 0 B	SHAFT	
E 5 - 2 1	CRANK ROD ASM.	
E 5 - 2 2 F	SCREW 11/64-40	2
E 5 - 2 3 F	HINGE SCREW	
E 5 - 2 4	OSCILLATOR	
E 5 - 2 5 H	NUT 1/4-40	
E 5 - 2 6	THRUST COLLAR ASM.	
E 5 - 2 7 F	SCREW 11/64-40	
E 5 - 2 8	THRUST COLLAR ASM.	
E 5 - 2 9 F	SCREW 11/64-40	
E 5 - 3 0	OSCILLATING SHAFT	



E5

SHUTTLE DRIVER SHAFT COMPONENTS

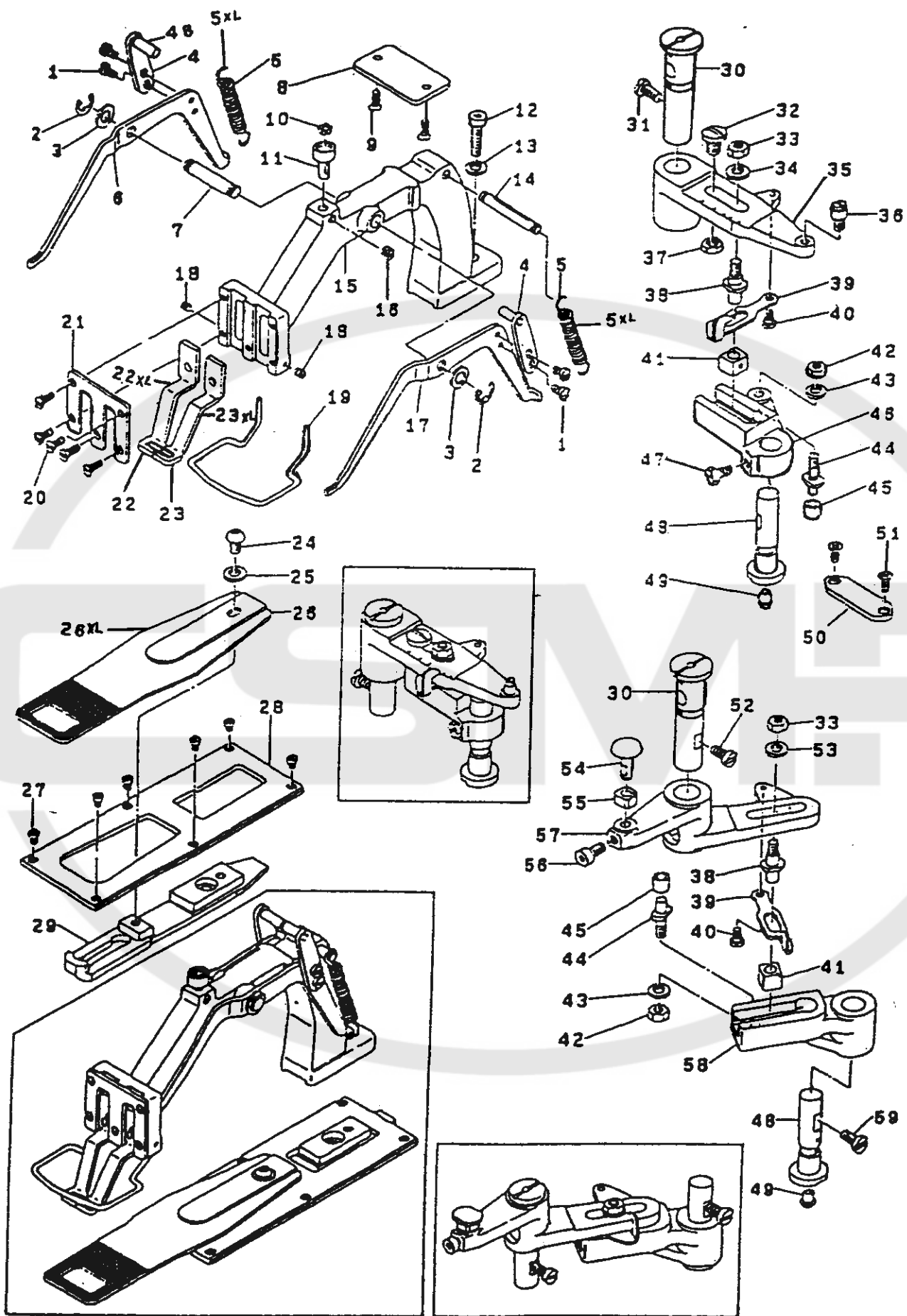
REF. NO.	DESCRIPTION	QTY
E 5 - 3 1 F	SCREW 15/64-28	
E 5 - 3 2	INNER HOOK PRESSER, LEFT	
E 5 - 3 3	INNER HOOK PRESSER, RIGHT	
E 5 - 3 4	INNER HOOK PRESSER SPRING	2
E 5 - 3 5	SPRING PIN 2.5*16	2
E 5 - 3 6	CYLINDER ARM CAP ASM.	
E 5 - 3 7	HOOK COVER PRESSER SPRING A	
E 5 - 3 8	HOOK COVER PRESSER SPRING B	
E 5 - 3 9 F	SCREW 11/64-40	
E 5 - 4 0	PIN	
E 5 - 4 1 F	SCREW 1/4-40	
E 5 - 4 2 F	SCREW 3/8-28	
E 5 - 4 3	WORM WHEEL ASM.	
E 5 - 4 3 -1	THRUST COLLAR ASM.	
E 5 - 43-2F	SCREW 3/16-28	4
E 5 - 4 4	WORM WHEEL SHAFT BUSHING	
E 5 - 4 5 F	SCREW 15/64-28	
E 5 - 4 6	THRUST COLLAR ASM.	
E 5 - 4 7 F	SCREW 1/4-40	2
E 5 - 4 8 H	NUT 1/4	
E 5 - 4 9	WORM WHEEL SHAFT ASM.	
E 5 - 49-1	WORM WHEEL SHAFT	
E 5 - 5 0	CAM GUIDE PIN	
E 5 - 5 1 H	NUT 9/16-20	
E 5 - 5 2	FEED CAM	



E6

FEED MECHANISM COMPONENTS

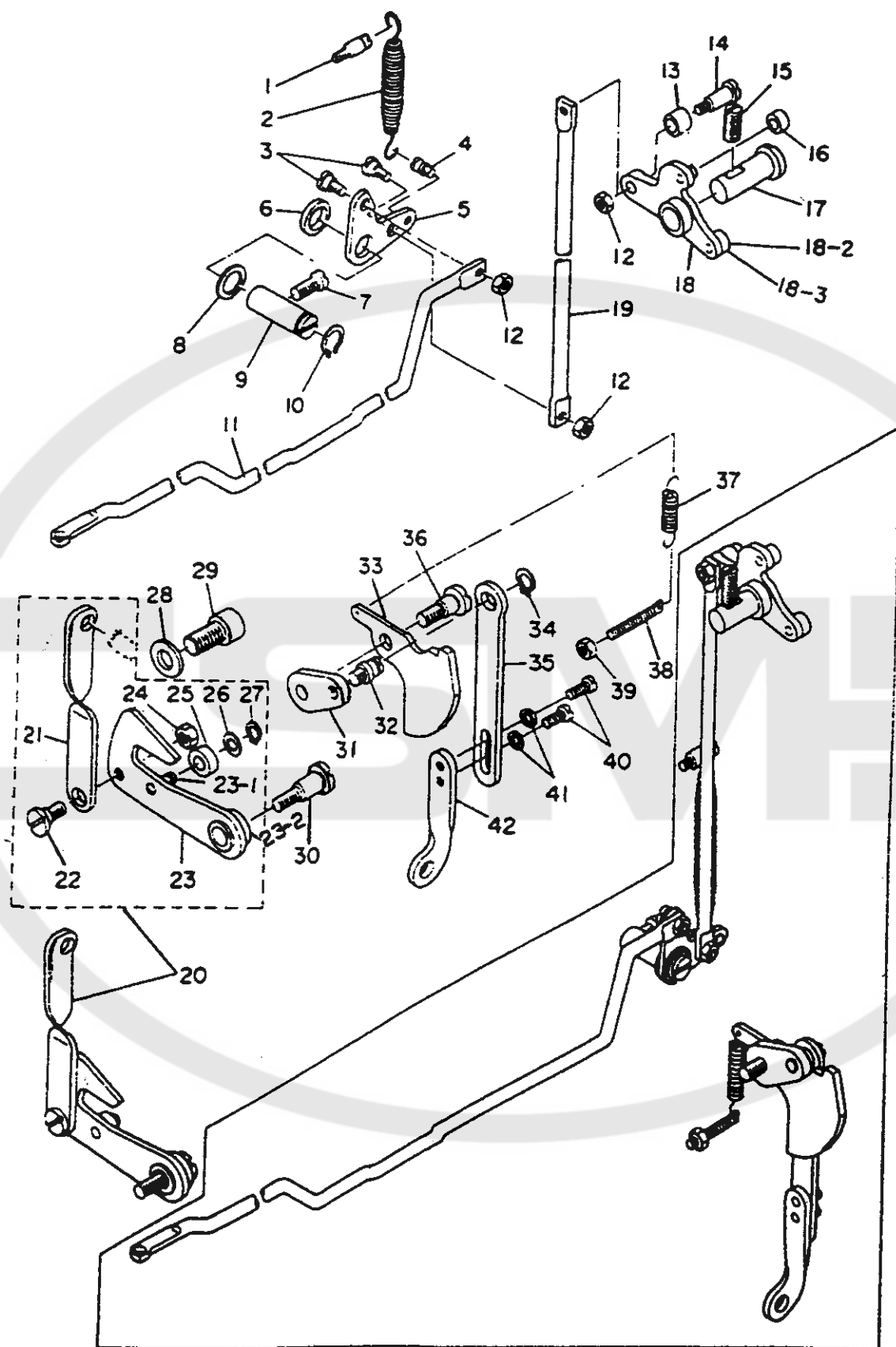
REF. NO.	DESCRIPTION	QTY
E 6 - 0 1 F	SCREW 11/64-40	4
E 6 - 0 2	E-RING 7	2
E 6 - 0 3	WASHER	2
E 6 - 0 4	LEVER DRIVING PLATE ASM.	2
E 6 - 0 4 B	PIN	2
E 6 - 0 5	TENSION SPRING	2
E 6 - 0 5 XL	TENSION SPRING (G)	
E 6 - 0 6	LIFTING LEVER, LEFT	
E 6 - 0 7	LIFTING LEVER SHAFT	
E 6 - 0 8	SUPPORT PLATE	
E 6 - 0 9 F	SCREW 11/64-40	2
E 6 - 1 0	WORK CLAMP FOOT MOUNTING BASE	7
E 6 - 1 1	BALL RETAINER	
E 6 - 1 2 F	SCREW 15/64-28	
E 6 - 1 3	WASHER 6.2*13*1	
E 6 - 1 4	SPRING SUSPENSION	
E 6 - 1 5	FEED BRACKET	
E 6 - 1 6 F	SCREW 15/64-28	
E 6 - 1 7	LIFTING LEVER, RIGHT	
E 6 - 1 8 F	SCREW 1/8-44	2
E 6 - 1 9	FINGER GUARDE	
E 6 - 2 0 F	SCREW 11/64-40	5
E 6 - 2 1	WORK CLAMP FOOT FACE PLATE	
E 6 - 2 2	WORK CLAMP FOOT, RIGHT	
E 6 - 2 2 XL	WORK CLAMP FOOT, RIGHT (G)	
E 6 - 2 3	WORK CLAMP FOOT, LEFT	
E 6 - 2 3 XL	WORK CLAMP FOOT, LEFT (G)	
E 6 - 2 4 F	SCREW 15/64-28	
E 6 - 2 5	WASHER	
E 6 - 2 6	FEED PLATE	
E 6 - 2 6 XL	FEED PLATE (G)	
E 6 - 2 7 F	SCREW 11/64-40	6
E 6 - 2 8	FEED PLATE PRESSER PLATE	
E 6 - 2 9	FEED PLATE CARRIER BAR	



E6

FEED MECHANISM COMPONENTS

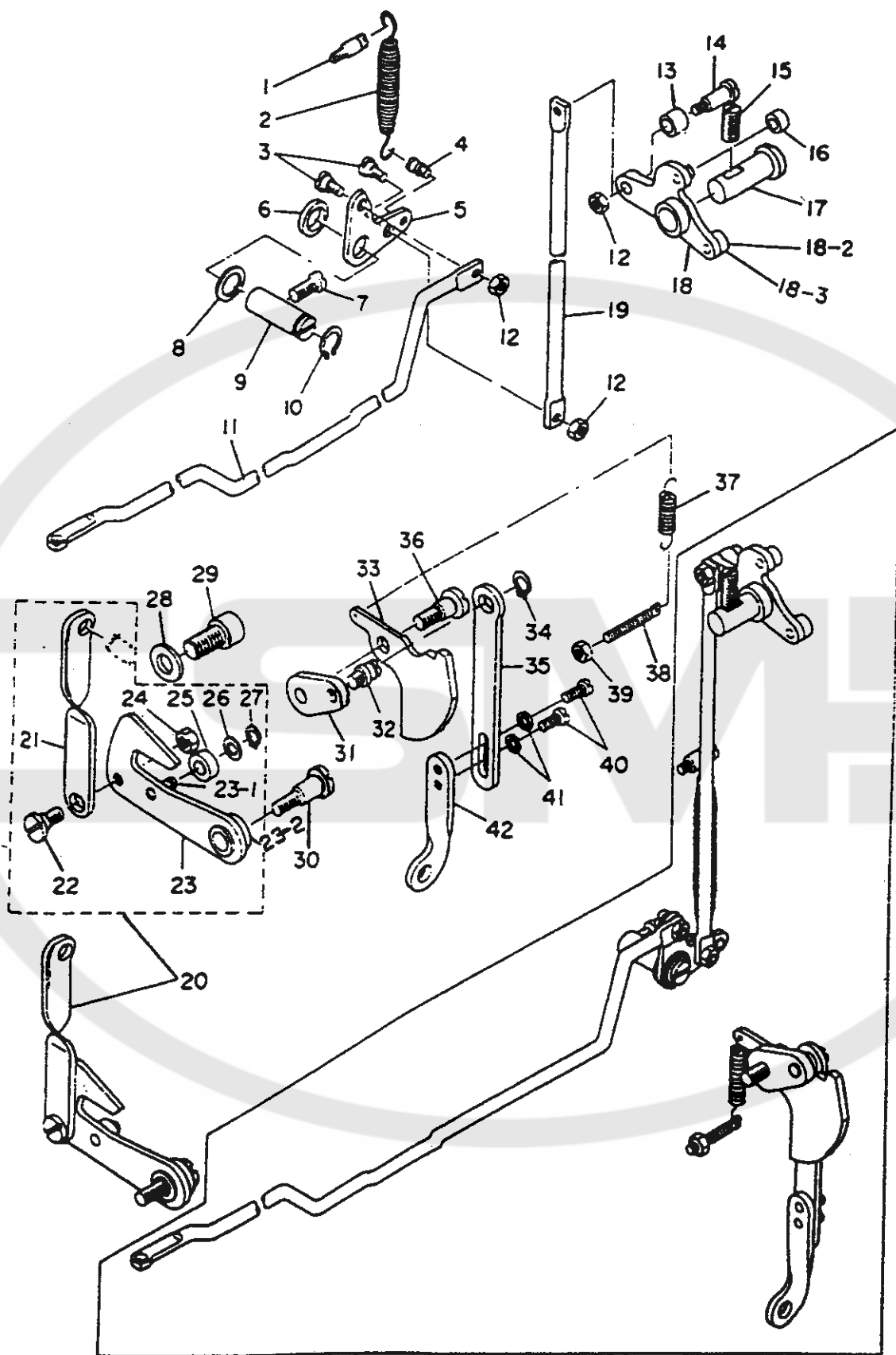
REF. NO.	DESCRIPTION	QTY
E 6 - 3 0	FEED DRIVING ARM SHAFT	2
E 6 - 3 1 F	SCREW 15/64-28	
E 6 - 3 2 F	SCREW 5/16-24	
E 6 - 3 3 H	NUT 15/64-28	2
E 6 - 3 4	WASHER 7*15*2	
E 6 - 3 5	FEED REGULATOR	
E 6 - 3 6	HINGE STUD	
E 6 - 3 7 H	NUT 5/16-24	
E 6 - 3 8	FEED REGULATOR STUD	2
E 6 - 3 9	INDICATOR LEVER	2
E 6 - 4 0 F	HINGE SCREW	2
E 6 - 4 1	SLIDE BLOCK B	2
E 6 - 4 2 H	NUT 1/4-40	2
E 6 - 4 3	WASHER 6.5*13*0.8	2
E 6 - 4 4	FEED CAM ROLLER SHAFT	2
E 6 - 4 5	FEED CAM ROLLER	2
E 6 - 4 6	FEED DRIVING ARM	
E 6 - 4 7 F	SCREW 15/64-28	
E 6 - 4 8	FEED REGULATOR SHAFT	2
E 6 - 4 9	RUBBER PLUG	2
E 6 - 5 0	PLATE	
E 6 - 5 1 F	SCREW 11/64-40	2
E 6 - 5 2 F	SCREW 15/64-28	
E 6 - 5 3	WASHER 7*20*4.5	
E 6 - 5 4	SLIDE BLOCK STUD	
E 6 - 5 5	SQUARE BLOCK	
E 6 - 5 6 F	SCREW 15/64-28	
E 6 - 5 7	FEED ACROSS DRIVING ARM	
E 6 - 5 8	FEED ACROSS REGULATOR	
E 6 - 5 9 F	SCREW 15/64-28	



E7

THREAD TRIMMING COMPONENTS

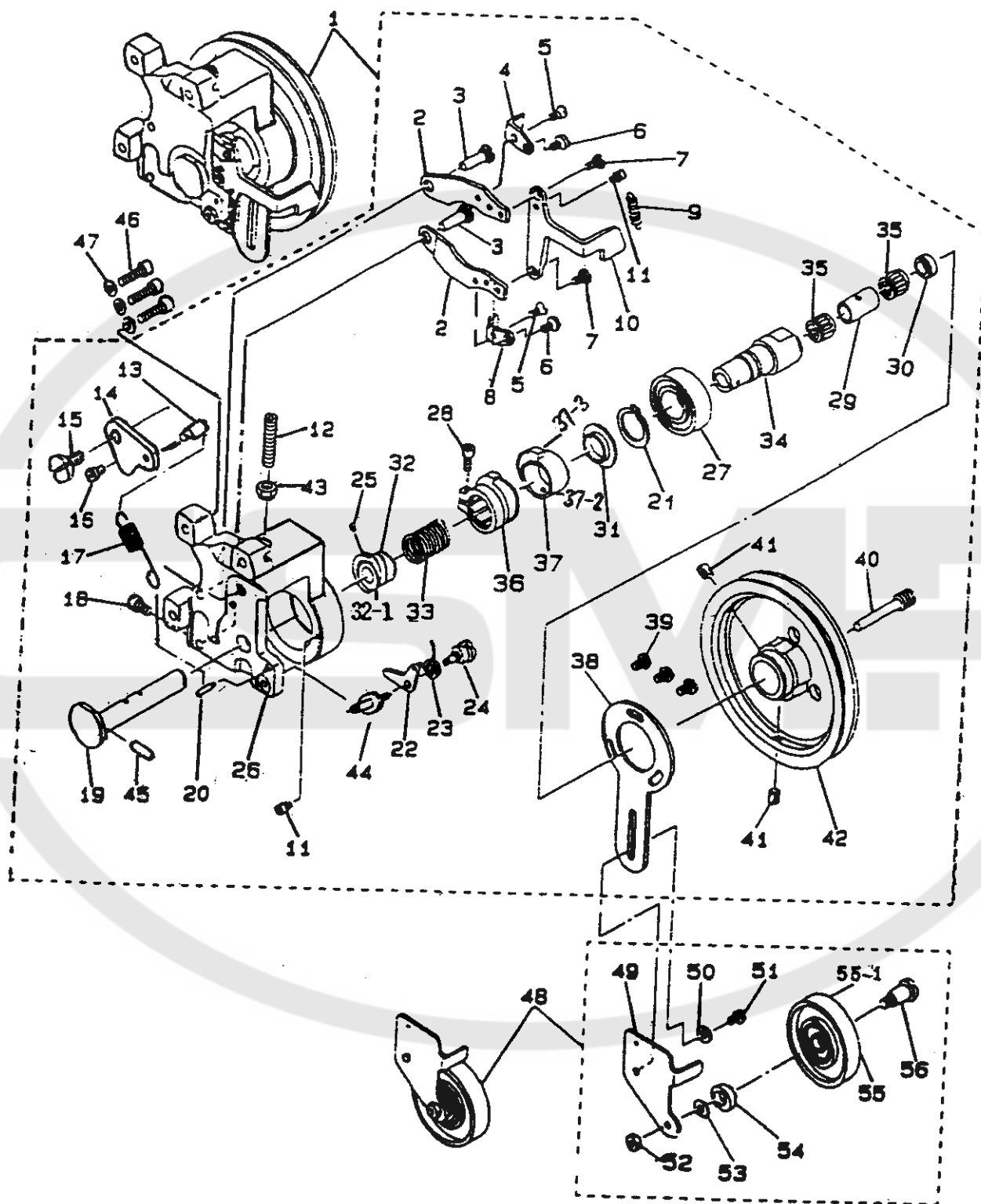
REF. NO.	DESCRIPTION	Q TY
E 7 - 0 1 F	TENSION SPRING RACK B	
E 7 - 0 2	TENSION SPRING	
E 7 - 0 3 F	HINGE SCREW	2
E 7 - 0 4 F	THREAD CUTTING LINK SPRING RAC	
E 7 - 0 5	THREAD CUTTING LINK	
E 7 - 0 6	THREAD CUTTING RING	
E 7 - 0 7 F	SCREW 15/64-28	
E 7 - 0 8	THREAD CUTTING LINK WASHER	
E 7 - 0 9	THREAD CUTTING LINK SHAFT	
E 7 - 1 0	RETAINING RING 10.2	
E 7 - 1 1	CONNECTING ROD, LARGE	
E 7 - 1 2 H	NUT 3/16-28	3
E 7 - 1 3	ROLLER	
E 7 - 1 4 F	HINGE SCREW	
E 7 - 1 5 F	SCREW 9/32-28	
E 7 - 1 6	THREAD CUTTING CAM ROLLER	
E 7 - 1 7	CAM STUD	
E 7 - 1 8	THREAD CUTTING CAM COMPL.	
E 7 - 1 8 -2	ROLLER	
E 7 - 1 8 -3	PIN	
E 7 - 1 9	CONNECTING ROD, SMALL	
E 7 - 2 0	LOWERING LINK ASM.	
E 7 - 2 1	LOWERING LINK	



E7

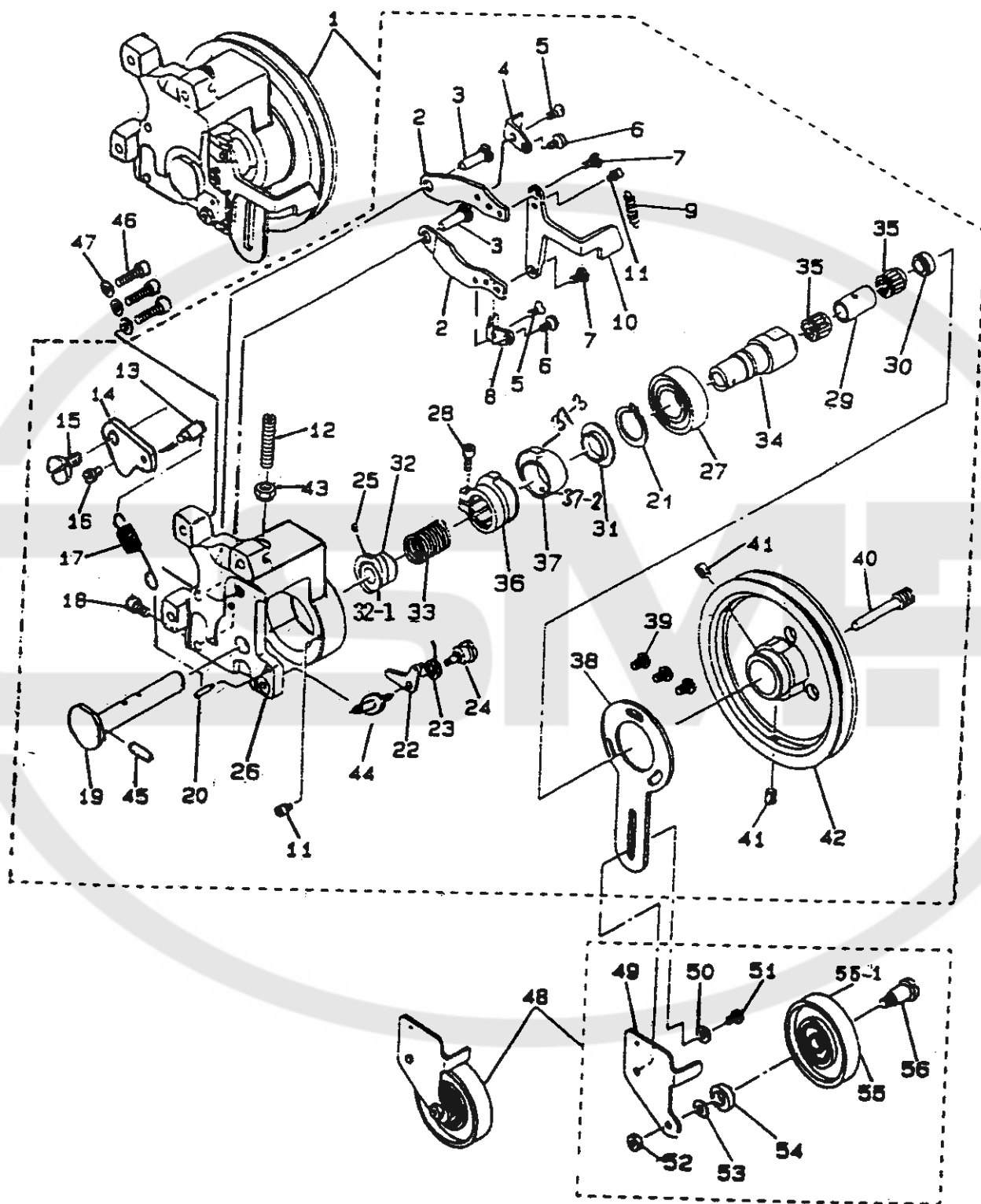
THREAD TRIMMING COMPONENTS

REF. NO.	DESCRIPTION	Q TY
E 7 - 2 2 F	HINGE SCREW 15/64-28	
E 7 - 2 3	LOWERING LEVER ASM.	
E 7 - 2 3 -1	PIN	
E 7 - 2 3 -2	ROLLER	
E 7 - 2 4 H	NUT 15/64-28	
E 7 - 2 5	ROLLER	
E 7 - 2 6	WASHER	
E 7 - 2 7	STOP RING	
E 7 - 2 8	WASHER 9.8*24*2.6	
E 7 - 2 9 F	SCREW 3/8-28	
E 7 - 3 0 F	HINGE SCREW	
E 7 - 3 1	AUXILIARY LEVER	
E 7 - 3 2	SHAFT	
E 7 - 3 3	THREAD TRIMMING AUXILIARY CAM	
E 7 - 3 4	RETAINING RING	
E 7 - 3 5	CONNECTING PLATE B	
E 7 - 3 6 F	HINGE SCREW	
E 7 - 3 7	SPRING	
E 7 - 3 8 F	TENSION SPRING ADJUSTING SCREW	
E 7 - 3 9 H	NUT 11/64-40	
E 7 - 4 0 F	SCREW 11/64-40	2
E 7 - 4 1	WASHER 4.8*8.4*0.8	2
E 7 - 4 2	CONNECTING PLATE A	



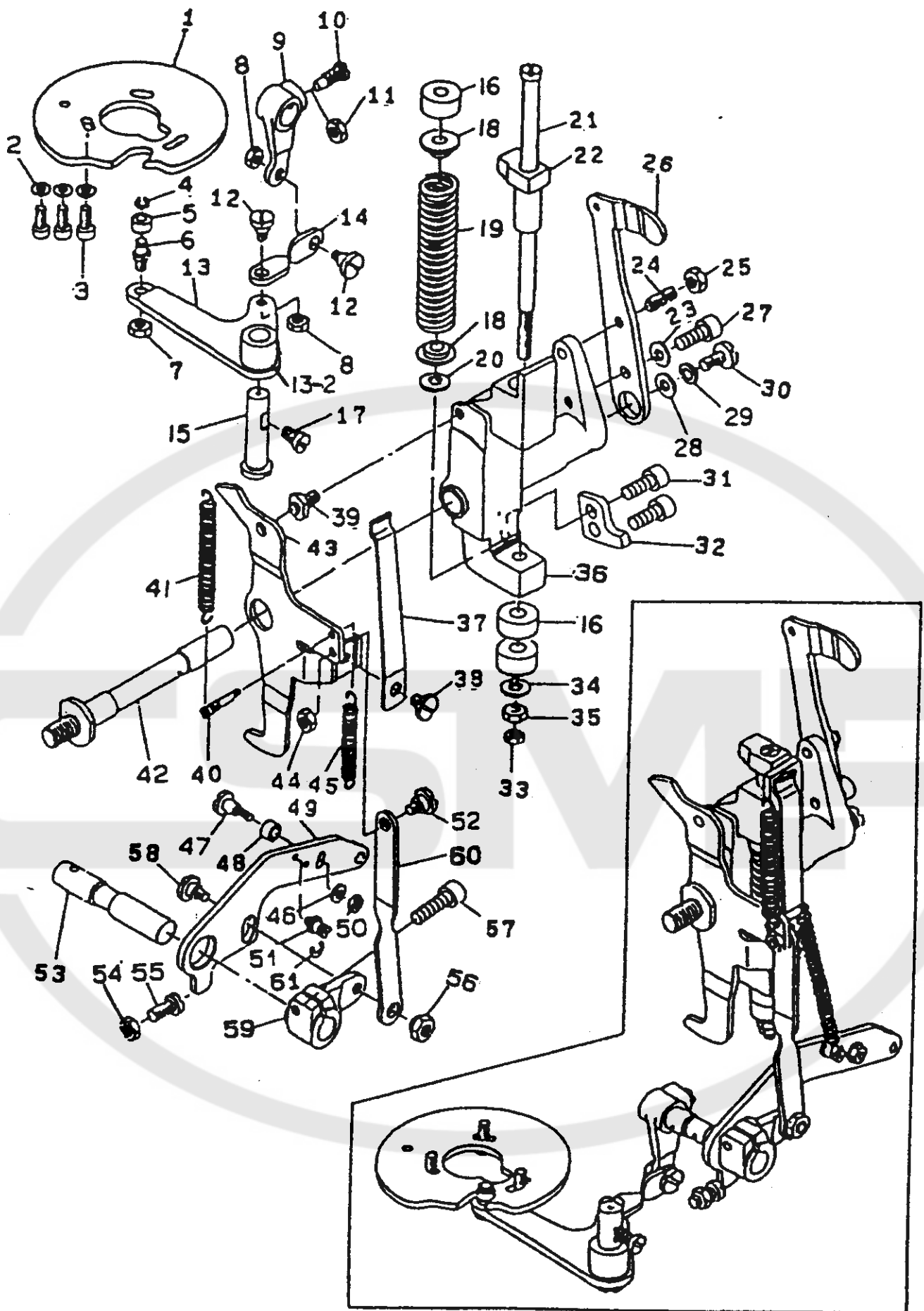
PEDAL PRESSURE DECREASING UNIT COMPONENTS

REF. NO.	DESCRIPTION	QTY
E 8 - 0 1	PRESSURE DECREASING DEVICE	
E 8 - 0 2	PRESSURE DECREASING LEVER	2
E 8 - 0 3 F	STUD	2
E 8 - 0 4	LEVER LATCH A	
E 8 - 0 5 F	SCREW 11/64-40	2
E 8 - 0 6 F	SCREW 11/64-40	2
E 8 - 0 7 F	HINGE SCREW	2
E 8 - 0 8	LEVER LATCH B	
E 8 - 0 9	SPRING	
E 8 - 1 0	PRESSURE DECREASING LEVER LINK	
E 8 - 1 1 F	THREAD CUTTING LINK SPRING RAC.	2
E 8 - 1 2 F	SCREW 15/64-28	
E 8 - 1 3	SUSPENSION PIN	
E 8 - 1 4	AUXILIARY CAM	
E 8 - 1 5 F	HINGE SCREW	
E 8 - 1 6 F	SCREW 11/64-40	
E 8 - 1 7	SPRING	
E 8 - 1 8 F	SCREW 15/64-28	2
E 8 - 1 9	PRESSURE DECREASING SHAFT ASM.	
E 8 - 2 0	PIN 3*16	
E 8 - 2 1	SNAP RING 18.5	
E 8 - 2 2	ROTATION PREVENTING LATCH ASM.	
E 8 - 2 3	SPRING	
E 8 - 2 4 F	HINGE SCREW	
E 8 - 2 5 F	SCREW 11/64-40	
E 8 - 2 6	PRESSURE DECREASING UNIT FRAME	
E 8 - 2 7	BEARING	
E 8 - 2 8 F	SCREW 3/16-28	
E 8 - 2 9	COLLAR A	
E 8 - 3 0	COLLAR B	



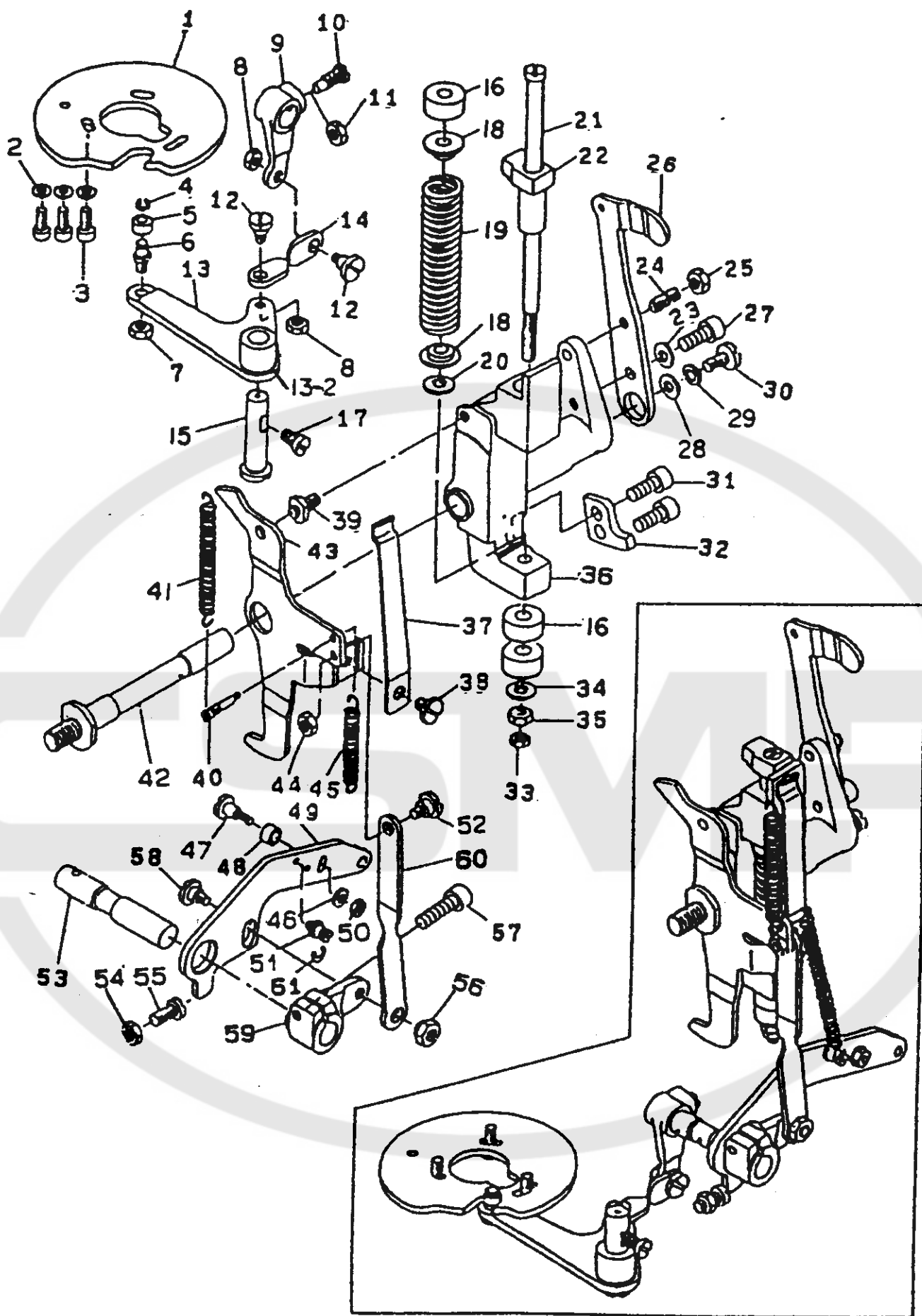
PEDAL PRESSURE DECREASING UNIT COMPONENTS

REF. NO.	DESCRIPTION	QTY
E 8 - 3 1	OUTER SLEEVE GUIDE	
E 8 - 3 2	DECREASING CLUTCH ASM.	
E 8 - 3 3	CLUTCH SPRING	
E 8 - 3 4	SHAFT	
E 8 - 3 5	BEARING	2
E 8 - 3 6	INNER SLEEVE	
E 8 - 3 7	OUTER SLEEVE	
E 8 - 3 7 - 2	PIN	
E 8 - 3 7 - 3	PIN	
E 8 - 3 8	IDLER PULLEY INSTALLING PLATE	
E 8 - 3 9 F	SCREW 11/64-40	3
E 8 - 4 0 F	SCREW	
E 8 - 4 1 F	SCREW 15/64-28	2
E 8 - 4 2	DRIVING PULLEY	
E 8 - 4 3 F	SCREW 15/64-28	
E 8 - 4 4 F	SCREW	
E 8 - 4 5	PIN	
E 8 - 4 6 F	SCREW 15/64-28	3
E 8 - 4 7	WASHER 6.2*13*1	3
E 8 - 4 8	-----	
E 8 - 4 9	IDLER PULLEY BRACKET	
E 8 - 5 0	WASHER 6.2*13*1	
E 8 - 5 1 F	SCREW 15/64-28	
E 8 - 5 2 H	NUT 15/64-28	
E 8 - 5 3	WASHER 6.1*18.5*2	
E 8 - 5 4	TENSION RING	
E 8 - 5 5	BEARING	
E 8 - 5 5 - 1	IDLER PULLEY ASM.	
E 8 - 5 6 F	HINGE SCREW	



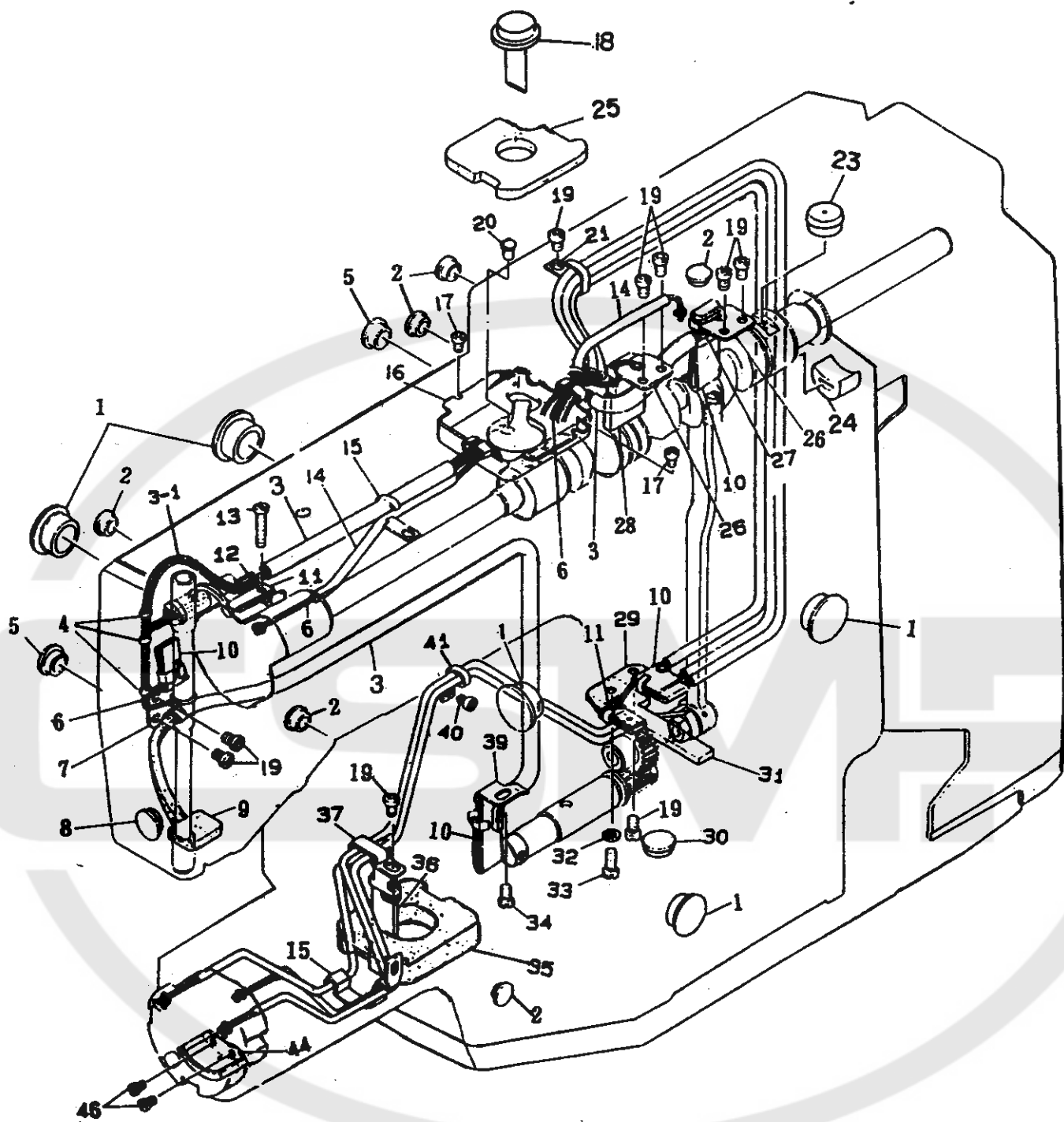
STOP-MOTION MECHANISM COMPONENTS

REF. NO.	DESCRIPTION	QTY
E 9 - 0 1	STOP-MOTION REGULATING CAM	
E 9 - 0 2	WASHER 4.8*8.4*0.8	3
E 9 - 0 3 F	SCREW 3/16-28	3
E 9 - 0 4	RETAINING RING 4.7	
E 9 - 0 5	COLLAR	
E 9 - 0 6 F	ROLLER SHAFT	
E 9 - 0 7 H	NUT 15/64-28	
E 9 - 0 8 H	NUT 15/64-28	2
E 9 - 0 9	STOP-MOTION ARM B	
E 9 - 1 0 F	SCREW 9/32-28	
E 9 - 1 1 H	NUT 9/32-28	
E 9 - 1 2 F	HINGE SCREW	2
E 9 - 1 3	REGULATING LEVER ASM.	
E 9 - 1 3 -2	ROLLER	
E 9 - 1 4	STOP-MOTION LINK	
E 9 - 1 5	REGULATING LEVER ASM.	
E 9 - 1 6	RUBBER CUSHION	3
E 9 - 1 7 F	SCREW 15/64-28	
E 9 - 1 8	WASHER	2
E 9 - 1 9	PRESSURE SPRING	
E 9 - 2 0	WASHER 7.5*19*1.5	
E 9 - 2 1	STOP LINK ROD	
E 9 - 2 2	STOP-MOTION HOOK	
E 9 - 2 3	WASHER 6.1*15.2*2.5	
E 9 - 2 4 F	SCREW 15/64-28	
E 9 - 2 5 H	NUT 15/64-28	
E 9 - 2 6	GREASE BOX	
E 9 - 2 7 F	SCREW 15/64-28	
E 9 - 2 8	WASHER 6.1*18.5*2	
E 9 - 2 9	SPRING WASHER 6.4*11.9*1.5	
E 9 - 3 0 F	SCREW 15/64-28	



STOP-MOTION MECHANISM COMPONENTS

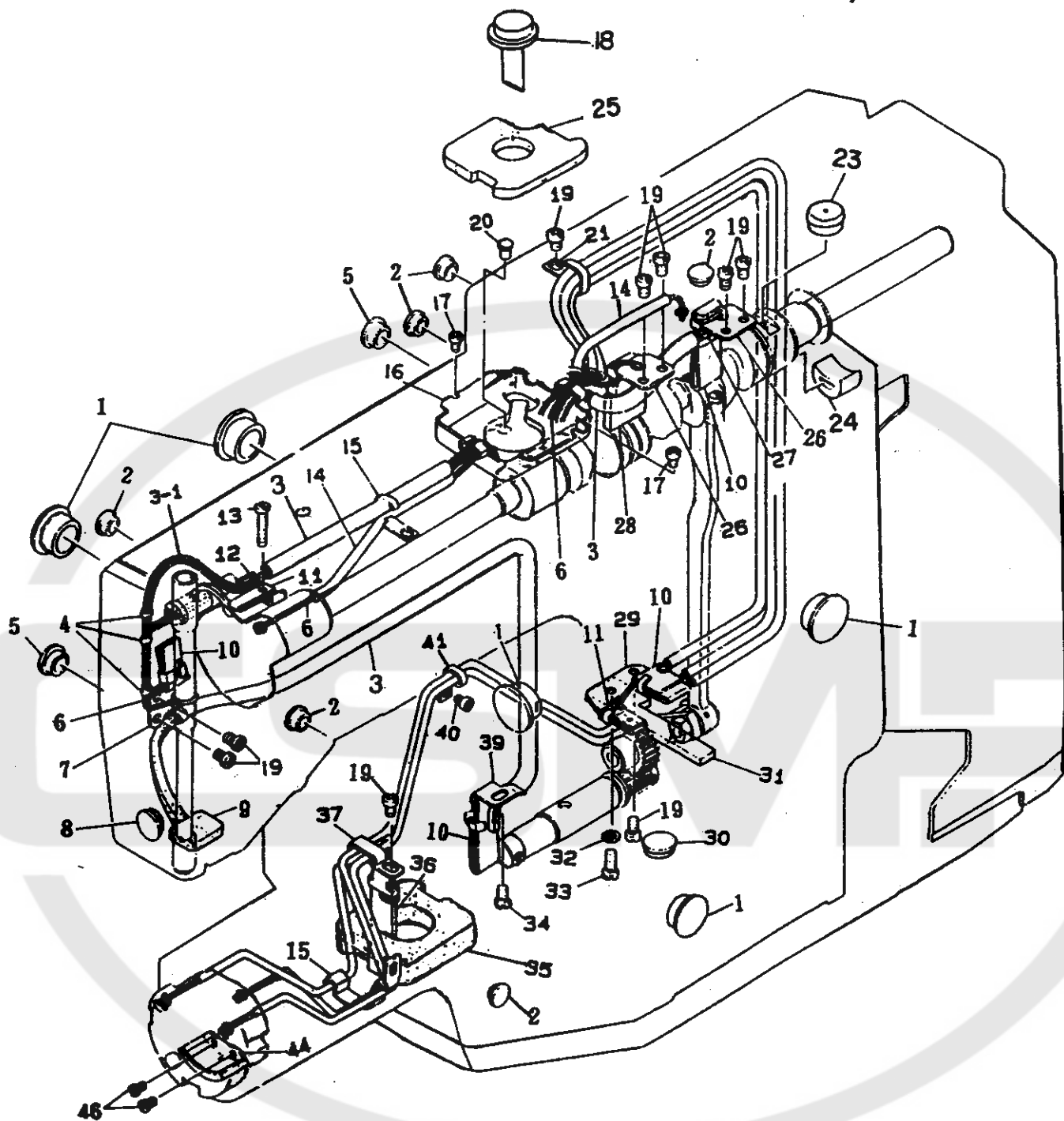
REF. NO.	DESCRIPTION	QTY
E 9 - 3 1 F	SCREW 15/64-28	2
E 9 - 3 2	SAFETY PLATE	
E 9 - 3 3 H	NUT 15/64-28	
E 9 - 3 4	WASHER 6.1*18.5*2	
E 9 - 3 5 H	NUT 15/64-28	
E 9 - 3 6	STOP-MOTION LEVER	
E 9 - 3 7	STOP-MOTION LEVER PLATE SPRING	
E 9 - 3 8 F	SCREW 9/32-28	
E 9 - 3 9 F	GUIDE PIN	
E 9 - 4 0	SPRING SUSPENSION	
E 9 - 4 1	TENSION SPRING	
E 9 - 4 2	STOP-MOTION LEVER SHAFT	
E 9 - 4 3	DRIVING PLATE	
E 9 - 4 4 H	NUT 15/64-28	
E 9 - 4 5	TENSION SPRING	
E 9 - 4 6	WASHER 4.8*8.4*0.8	
E 9 - 4 7 F	HINGE SCREW	
E 9 - 4 8	SLIDE ROLLER	
E 9 - 4 9	STARTING LEVER	
E 9 - 5 0 H	NUT 11/64-40	
E 9 - 5 1	SUSPENSION SCREW	
E 9 - 5 2 F	HINGE SCREW	
E 9 - 5 3	STOP-MOTION ARM SHAFT	
E 9 - 5 4 H	NUT 15/64-28	
E 9 - 5 5 F	SCREW 15/64-28	
E 9 - 5 6 H	NUT 15/64-28	
E 9 - 5 7 F	SCREW 15/64-28	
E 9 - 5 8 F	HINGE SCREW	
E 9 - 5 9	STOP-MOTION ARM A ASM.	
E 9 - 6 0	STOP-MOTION CONNECTING LEVER	
E 9 - 6 1	E-RING 4	



E10

LUBRICATION MECHANISM COMPONENTS

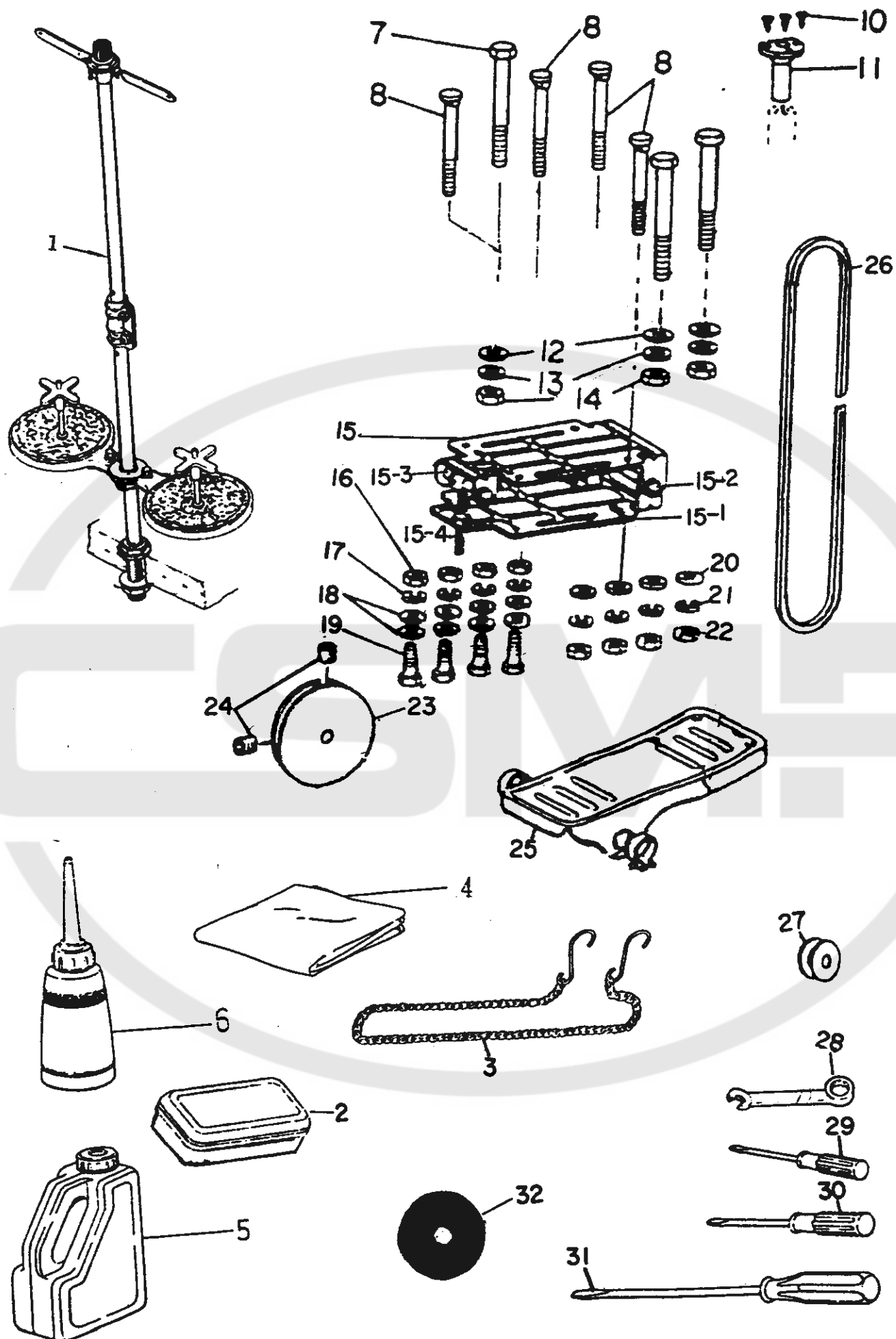
REF. NO.	DESCRIPTION	Q TY
E 1 0 - 0 1	RUBBER PLUG	5
E 1 0 - 0 2	RUBBER PLUG	6
E 1 0 - 0 3	VINYL TUBE, WHITE D=6	
E 1 0 - 3 -1	OIL TANK FELT	
E 1 0 - 0 4	OIL WICK HOLDER	3
E 1 0 - 0 5	RUBBER PLUG	2
E 1 0 - 0 6	OIL WICK	
E 1 0 - 0 7	OIL WICK HOLDER	
E 1 0 - 0 8	RUBBER PLUG	
E 1 0 - 0 9	OIL FELT	
E 1 0 - 1 0	OIL SPONGE	4
E 1 0 - 1 1	OIL SPONGE	2
E 1 0 - 1 2	LUBRICATING PLATE	
E 1 0 - 13F	SCREW 9/64-40	
E 1 0 - 1 4	VINYL TUBE, WHITE D=3	
E 1 0 - 1 5	OIL WICK HOLDER	2
E 1 0 - 1 6	OIL TANK	
E 1 0 - 17F	SCREW 9/64-40	
E 1 0 - 1 8	OIL GAUGE	
E 1 0 - 19F	SCREW 11/64-40	11
E 1 0 - 2 0	RUBBER PLUG	
E 1 0 - 2 1	OIL WICK HOLDER	
E 1 0 - 2 3	GREASF CAP	
E 1 0 - 2 4	BUSHING	
E 1 0 - 2 5	OIL TANK FELT	
E 1 0 - 2 6	OIL FELT INSTALLING PLATE	2



E10

LUBRICATION MECHANISM COMPONENTS

REF. NO.	DESCRIPTION	Q TY
E 1 0 - 2 7	OIL FELT	
E 1 0 - 2 8	OIL FELT	
E 1 0 - 2 9	OIL FELT SUPPORTING PLATE	
E 1 0 - 3 0	RUBBER PLUG	
E 1 0 - 3 1	OIL WICK SUPPORTING FELT	
E 1 0 - 3 2	WASHER 6.2*13*1	
E 1 0 - 33F	SCREW 11/64-40	
E 1 0 - 34F	SCREW 11/64-40	
E 1 0 - 3 5	OIL TANK FELT	
E 1 0 - 3 6	OIL FELT, FOR SHUTTLE RACF	2
E 1 0 - 3 7	OIL TUBE HOLDER A	
E 1 0 - 3 9	OIL FELT HOLDER	
E 1 0 - 40F	SCREW 11/64-40	
E 1 0 - 4 1	OIL TUBE HOLDER	
E 1 0 - 4 4	PRESSER PLATE	
E 1 0 - 46F	SCREW 9/64-40	2



E11

REF. NO.	DESCRIPTION	QTY
E 1 1 - 0 1	THREAD STAND ASM.	
E 1 1 - 0 2	ACCESSORY BAG	
E 1 1 - 0 3	CHAIN	
E 1 1 - 0 4	HEAD COVER	
E 1 1 - 0 5	OIL TANK	
E 1 1 - 0 6	OILER ASSEMBLY	
E 1 1 - 0 7	SCREW 15/64-28	3
E 1 1 - 0 8	MOUNTING BOLT	4
E 1 1 - 1 0	WOOD SCREW	3
E 1 1 - 1 1	OIL DPAIN	
E 1 1 - 1 2	WASHER 6.1*18.5*2	3
E 1 1 - 1 3	WASHER 6.2*13*1	3
E 1 1 - 1 4	NUT 15/64-28	3
E 1 1 - 1 5	MOTOR BASE ASM.	
E 1 1 - 15-1	-----	
E 1 1 - 15-2	-----	
E 1 1 - 15-3	-----	
E 1 1 - 15-4	-----	
E 1 1 - 1 6	NUT M6	4
E 1 1 - 1 7	SPRING WASHER 6.2*11.4*1.2	4
E 1 1 - 1 8	WASHER 6.1*18.5*2	8
E 1 1 - 1 9	SCREW M6	4
E 1 1 - 2 0	WASHER 8.5*18*1.6	4
E 1 1 - 2 1	SPRING WASHER 9*15*2	4
E 1 1 - 2 2	NUT 5/16*18	4
E 1 1 - 2 3	MOTOR PULLEY	
E 1 1 - 2 4	SCREW 15/64*28	2
E 1 1 - 2 5	THREADLE	
E 1 1 - 2 6	V-BELT, INCH	2
E 1 1 - 2 7	BOBBIN	3
E 1 1 - 2 8	SPANNER	
E 1 1 - 2 9	SCREW DRIVER	
E 1 1 - 3 0	SCREW DRIVER	
E 1 1 - 3 1	SCREW DRIVER	
E 1 1 - 3 2	RUBBER WASHER	