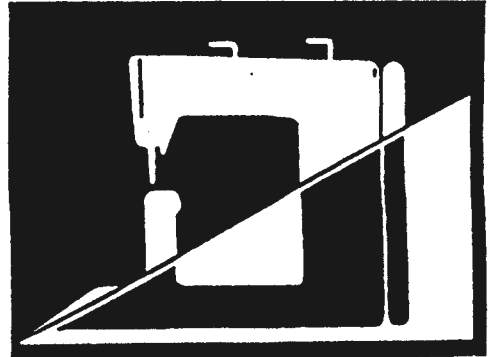
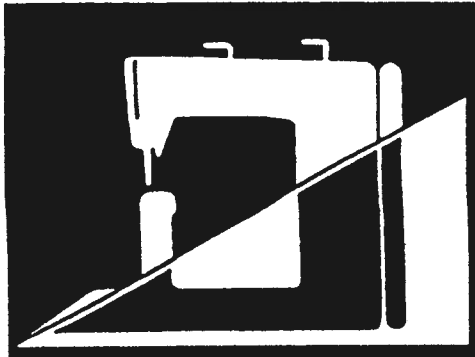
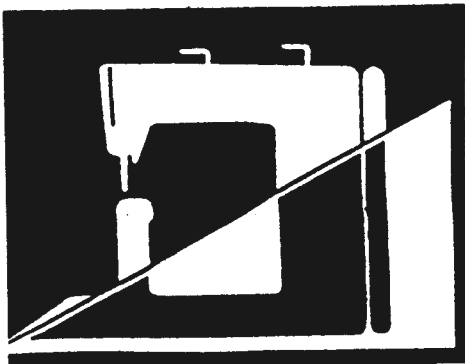


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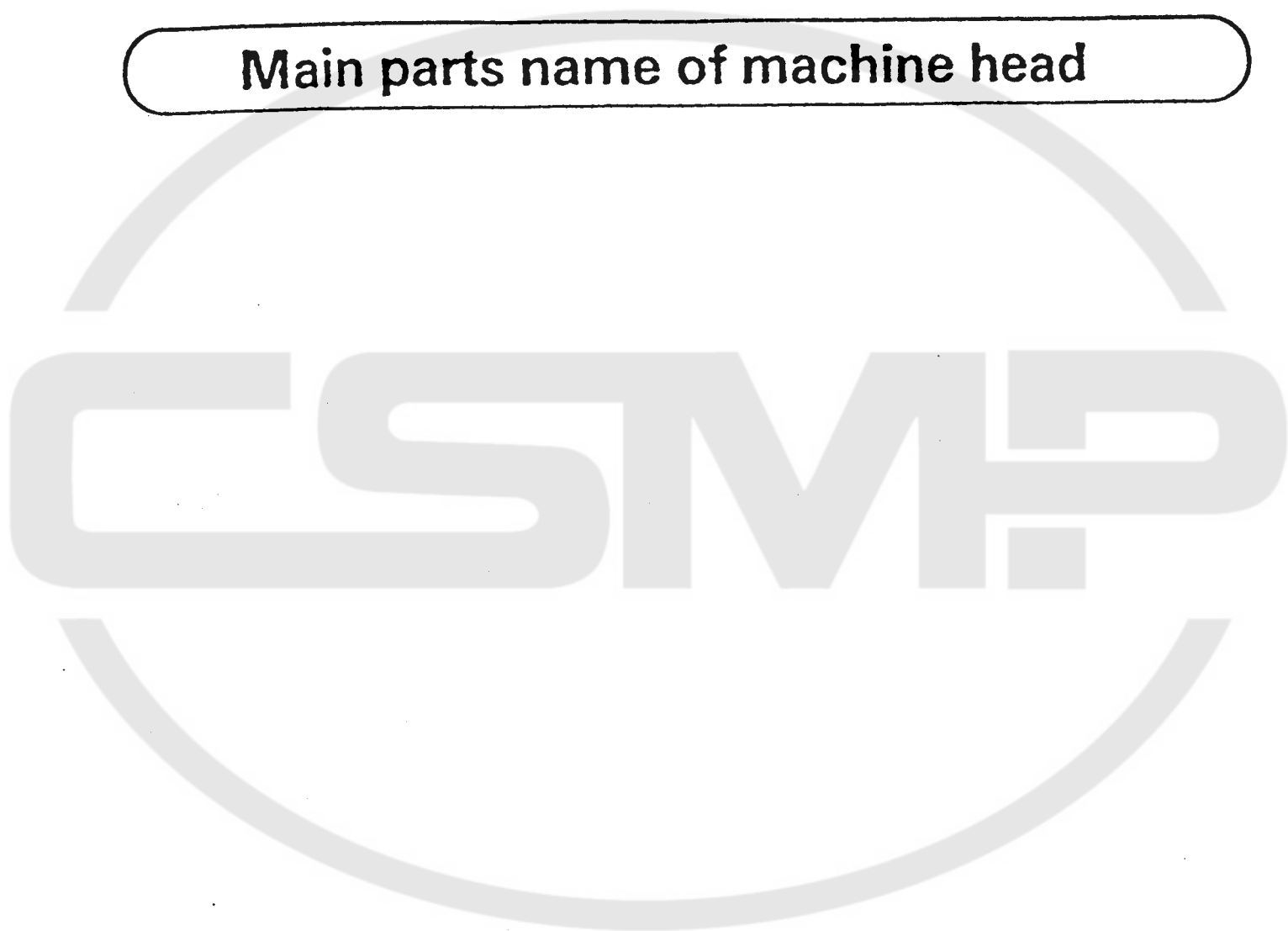
LP 933 R -
934 R



**INSTRUCTIONS FOR ADJUSTMENT AND SERVICING AND LIST OF PARTS FOR
SINGLE-NEEDLE / TWO NEEDLE POST BED INDUSTRIAL SEWING MACHINE
WITH TOP ROLLER AND REVERSE FEED**

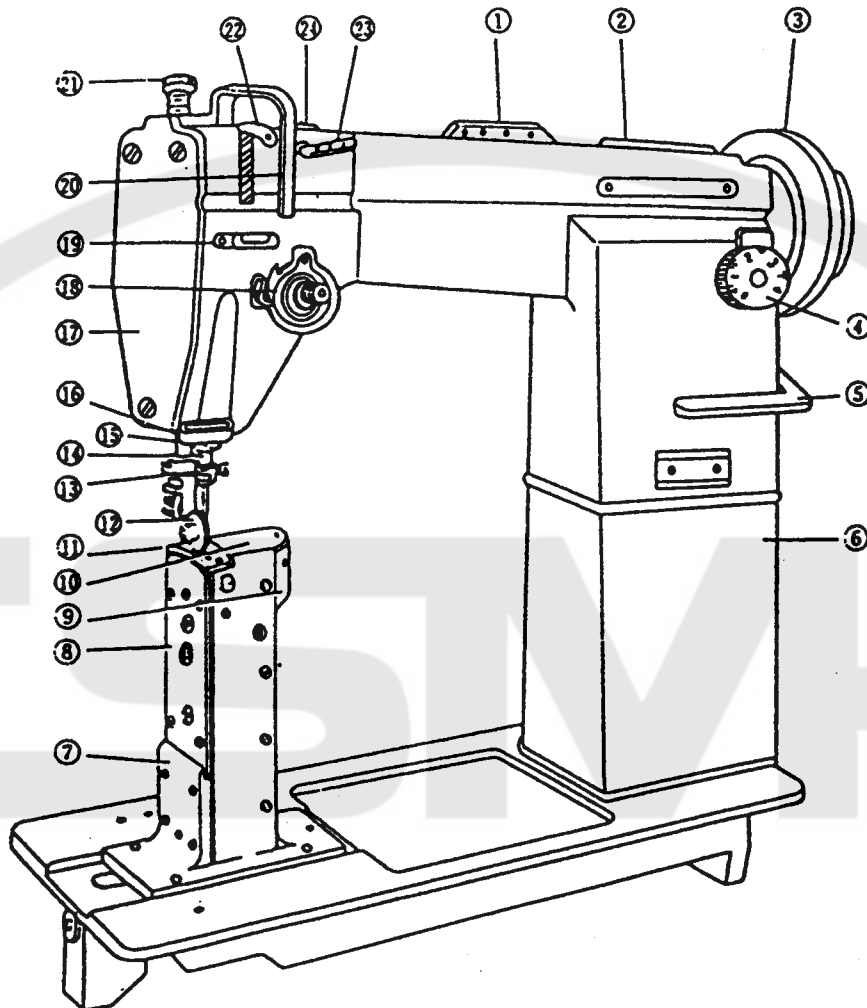
LP 933 R / 934 R

Main parts name of machine head



Main parts name of machine head

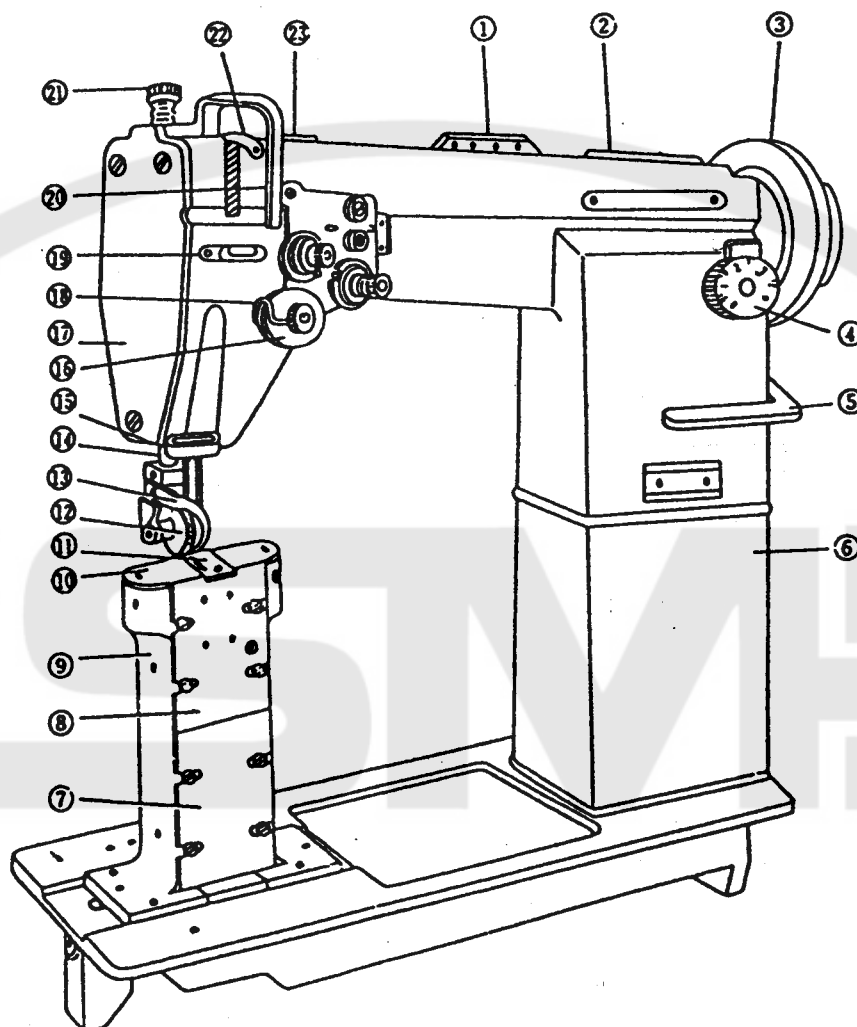
One-Needle Type



- | | |
|--------------------------------|----------------------------------|
| ① Thread guide (arm) | ⑭ Needle bar |
| ② Oil reservoir (right) | ⑮ Presser bar |
| ③ Balance wheel | ⑯ Thread guide (Lower) |
| ④ Stitch regulating dial | ⑰ Face plate |
| ⑤ Reverse lever | ⑱ Thread tension regulator |
| ⑥ Post | ⑲ Thread guide (arm) |
| ⑦ Hook post holder | ⑳ Thread take up lever guard |
| ⑧ Hook post cover plate (back) | ㉑ Presser regulating thumb screw |
| ⑨ Hook shaft bracket | ㉒ Thread take up lever |
| ⑩ Slide plate | ㉓ Thread retainer |
| ⑪ Needle plate | ㉔ Oil reservoir (left) |
| ⑫ Roller foot | |
| ⑬ Thread guide (needle bar) | |

Main parts name of machine head

(Two-Needle Type)



- | | | |
|---------------------------------|--------------------------|----------------------------------|
| ① Thread guide (arm) | ⑨ Hook shaft bracket | ⑰ Face plate |
| ② Oil reservoir | ⑩ Slide plate | ⑱ Thread tension regulator |
| ③ Balance wheel | ⑪ Needle plate | ⑲ Thread guide (upper) |
| ④ Stitch regulating dial | ⑫ Roller foot | ⑳ Thread take up lever guard |
| ⑤ Reverse lever | ⑬ Needle guide | ㉑ Presser regulating thumb screw |
| ⑥ Post | ⑭ Presser bar | ㉒ Thread take up lever |
| ⑦ Hook post cover plate (lower) | ⑮ Thread guide (lower) | ㉓ Oil reservoir (left) |
| ⑧ Hook post cover plate (upper) | ⑯ Thread controller disc | |

Preparation for installation of machine head

CSTMP

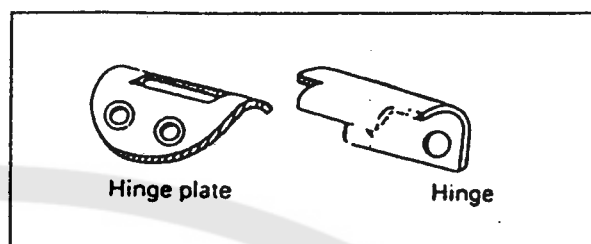
Preparation for installation of machine head

1 PLACE OF INSTALLATION OF MACHINE.

The machine should be installed on wellleveled floor in order to ensure smooth operating of your machine at high speed without vibration.

2 HOW TO MOUNT THE MACHINE HEAD ON TO THE TABLE.

Instal the hinge with screws, provided in accessory, at hole on the back of the bed and hook to the hinge plate of the table, then the head is set on the table.

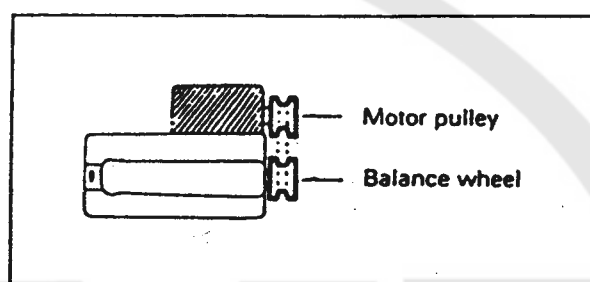


3 MOUNTING OF THE MOTOR.

The motor is mounted generally with bolts, nuts, and washers as provided.

Set the position so that the motor pulley and balance wheel grooves are aligned straight as shown in Fig. for proper operation when the belt is inserted.

Then connect power supply cord and motor cord extened from switch.

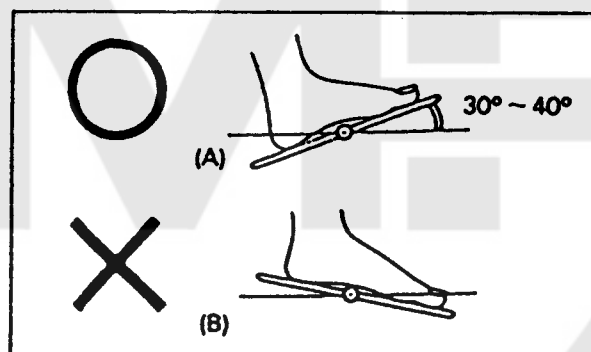


4 HOW TO CONNECT THE MOTOR LEVER AND FOOT PEDAL.

The angle of the slope of the pedal can be important. It can make a difference in the strengh necessary to press the pedal.

There might be a slight difference in operator's posture, but generally 30° ~ 40° angel as shown in fig. (A) is considered best.

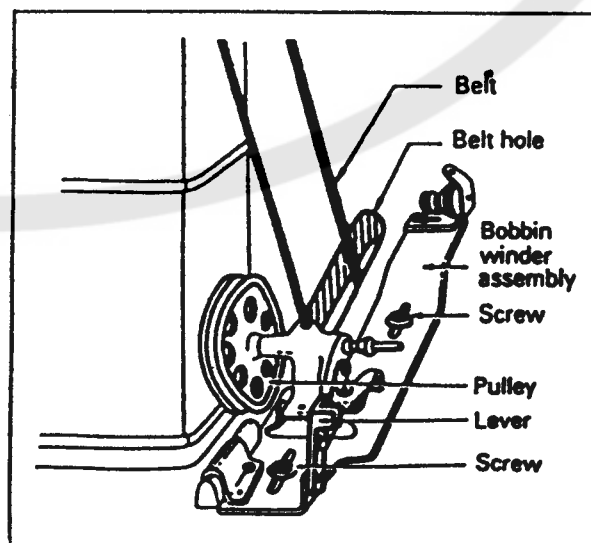
The treadle position shown in fig. (B) will be difficult. In this case, adjust the length of the connecting rod to suit the operator.



5 HOW TO MOUNT THE BOBBIN WINDER ASSEMBLY.

Set the position of the bobbin winder assembly provided in accessory, to be in parallel with the belt hole of the table, with the lever pushed in operation position.

When bobbin winder pulley will come in contact with the belt, fix the assembly onto the table with two screw provided, as shown in Fig.



Preparation for installation of machine head

6 HOW TO MOUNT AND ADJUST THE KNEE LIFTER MECHANISM.

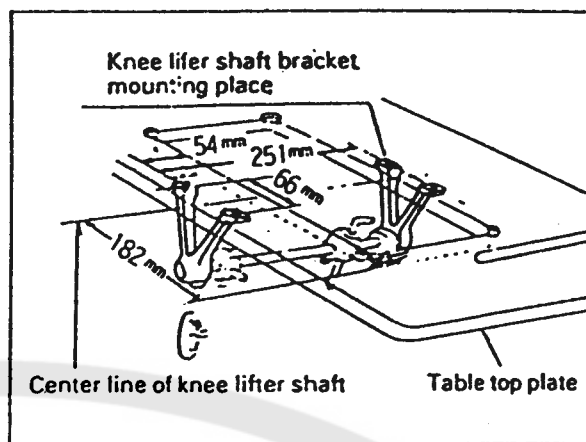
The knee lifter mechanism is employed to raise and lower the presser bar.

Mount it properly onto the table by following method for easy operation.

If improperly installed, the operating action will be and tire the operator.

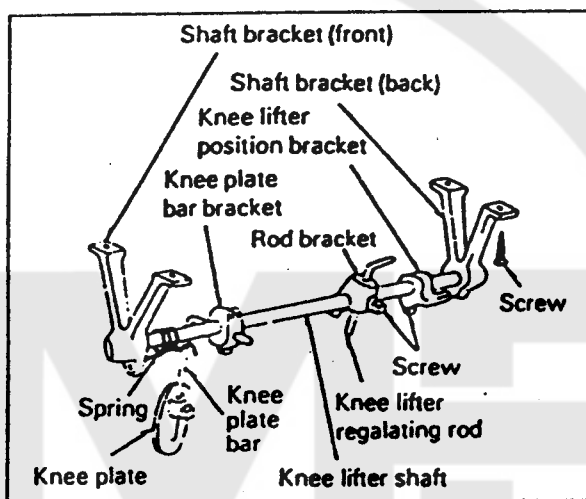
1) Place of mounting.

Make a hole for knee lifter shaft bracket underneath the table according to Fig. shown.



2) How to mount.

- (1) Mount the knee lifter shaft bracket while the side of hole for spring towards your side as shown in Fig.
- (2) The other side of the knee lifter shaft bracket is screwed so as able to insert the knee lifter shaft.
- (3) On the knee lifter shaft, mount the knee lifter position bracket, regulating rod bracket, knee plate bar bracket, and spring in the order mentioned, then tighten respectively.
- (4) Mount the knee lifter shaft, on which fixed respective parts, on the shaft bracket.
- (5) After checking up all the parts and inclination of the knee lifter shaft, tighten the shaft bracket screws.
- (6) The shorter side of knee plate bar is mounted on the bar bracket, and longer side of the bar is mounted on the knee plate.
- (7) The end of spring is inserted into a hole of the shaft bracket (front).
- (8) The other end of spring is placed on the knee plate bar moving it.
- (9) After mounting all these parts, check whether the knee lifter mechanism can be operated lightly.



Preparation for installation of machine head

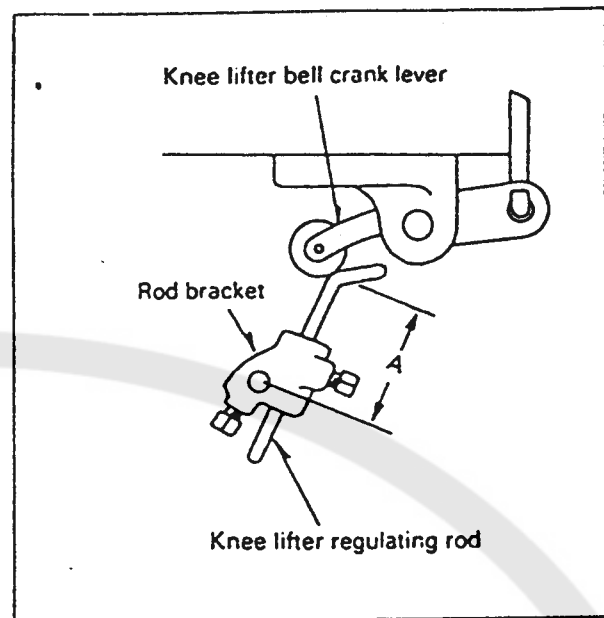
3) Adjustment.

(1) Place of knee lifter position bracket. Since the position bracket makes standardize the starting point of knee plate, tighten the screw at the proper position so that the stopper of position bracket come contact with top underneath of the shaft bracket (back).

(2) Position of the knee lifter bell crank regulating rod and its bracket.

The regulating rod makes raise and down the presser foot by means of moving the bell crank lever up and down.

While the presser foot downed adjust the length (A) loosening the regulating rod screw so that the rod and crank lever contacts with as shown in Fig.



7 HOW TO MOUNT THE OIL PAN.

Fit the oil pan with nails into the hole bored in the table so as not to come into contact with the knee lifter mechanism.

8 HOW TO MOUNT THE VIBRATION PREEVENTING RUBBER.

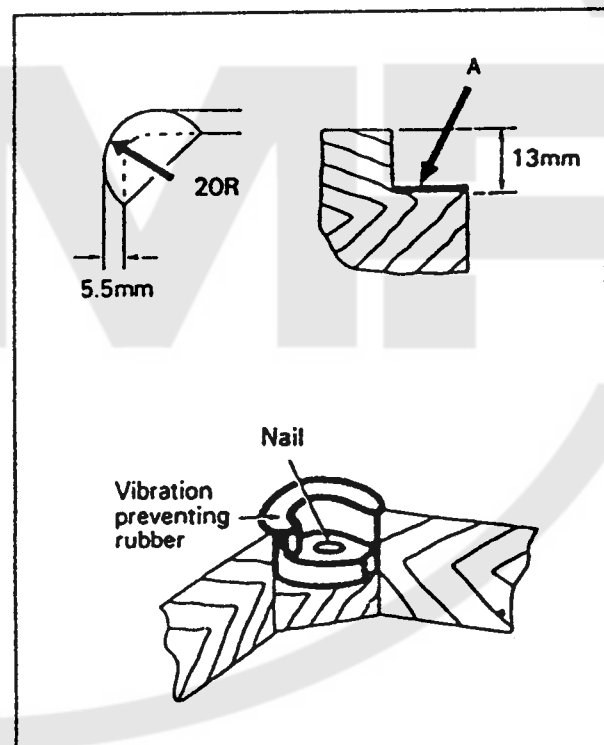
The vibration preventing rubber is used to prevent the machine from vibrating and there by provide smooth operation of the machine.

Fit these rubber insulators properly at the four corners of the table as shown in Fig. Remember, the machine will vibrate if these are not mounted properly.

(1) Hollow out four corners of the table 20mm radius and 13mm depth to fit the rubber insulators.

Be sure to give smooth surface to "A" where hollow out is made.

(2) Nail the vibration preventing rubbers down at the four corners.



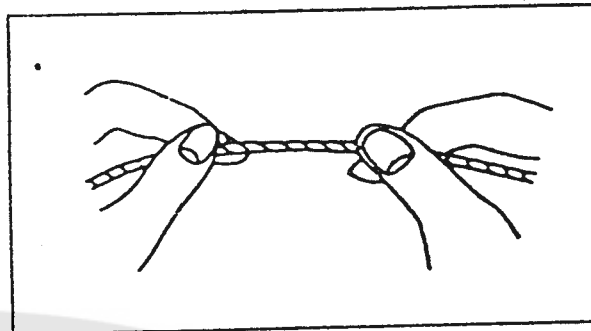
Preparation for operation



Preparation for operation

1 SELECTION OF THREAD.

For best results, use high quality machine thread.
For upper thread use left-twist thread.
To check whether a thread is left-twist or right-twist, hold the thread as shown in Fig., and twist the thread held in the right hand toward your side. If the thread twist becomes loose, the thread is right-twist, and if the thread twist becomes tight the thread is left-twist.

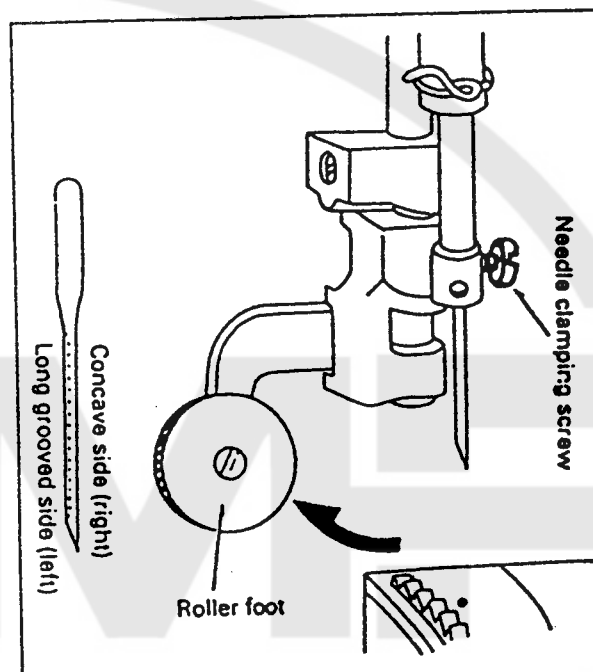


2 HOW TO ATTACH THE NEEDLE.

DP x 5 (135 x 5) type needle is recommendable for general use.
But select the needle size that meets the requirements of the materials sewn and the thread used.

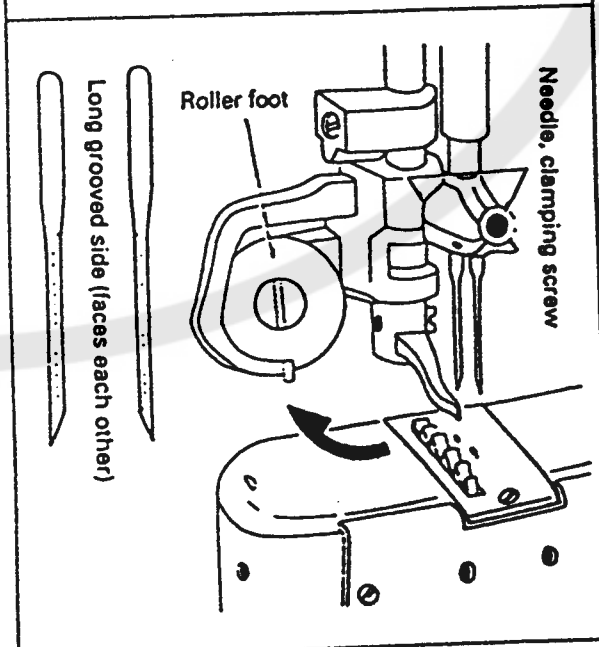
For One Needle Type

- (1) While the presser bar lifter is raised, turn the balance wheel by hand to raise the needle bar to its highest position.
- (2) Move the roller foot to the left as shown in Fig.
- (3) Loosen the needle clamping screw.
- (4) Hold the needle to its side with the long groove side (left). Then insert the needle as deeply it will go into the needle clamping hole.
- (5) Securely tighten the needle clamping screw.



For Two Needle Type

- (1) While the presser bar lifter is raised, turn the balance wheel by hand to raise the needle bar to its highest position.
- (2) Move the roller foot to the left as shown in Fig.
- (3) Loosen the needle clamping screw.
- (4) Hold the needles so that the two needles side with the long grooved (faces each other), and insert it as deeply as it will go into the needle clamping holes.
- (1) Securely tighten the needle clamping screw.



Preparation for operation

When using nylon or silk threads, the loops may be formed improperly or stitch skipping may result due to the twist of these threads. In this case, observe the condition of the loops and mount the needle in a manner that the needle hole would be positioned in a slightly oblique direction.

Needle sectional plan



In case of usual thread

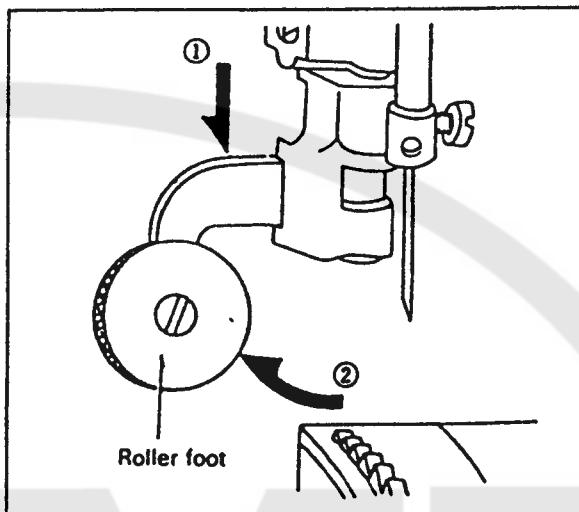


In case of nylon & silk thread

3 HOW TO LEAD THE UPPER THREAD.

For one Needle Type

- (1) Raise the thread take up lever to its highest position turning the balance wheel by hand.
- (2) After the presser bar lifter is raised, move the roller foot the left holding downward as per arrow shown in Fig.



(3) Thread in the following order:

- | | |
|-------------------------|-----------------------------|
| ① Thread guide (arm) | ⑦ Thread guide (Lower) |
| ② Thread retainer | ⑧ Thread guide (needle bar) |
| ③ Tension discs | ⑨ Needle |
| ④ Thread take up spring | |
| ⑤ Thread guide (arm) | |
| ⑥ Thread take up | |

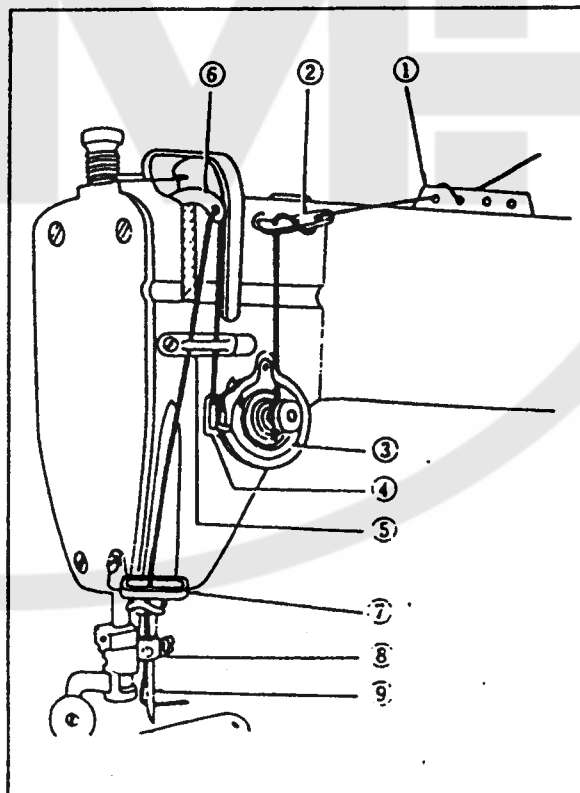
Thread guide ① with cross-shaped hole, and thread retainer ② are provided to prevent the thread from twisting, so follow as shown in Fig.

The tension discs ③ consists of two discs, pass the thread between there discs from the right to the left.

For the thread take up spring ④, pass the thread from the right to the left.

For the take up lever ⑥ pass it from the right to the left.

For the needle ⑨, pass it from the left to the right.



Preparation for operation

In case of Two Needle Type

- (1) Raise the thread take up lever to its highest position turning the balance wheel by hand.
- (2) In caes of the roller foot, it is same order as one needle type did-move the roller foot to the left.
- (3) How to thread from the cotton stand spool (left).

- | | |
|---------------------------------------|---------------------------------|
| (L1) Thread guide (left) | (6) Thread take up spring |
| (L2) Thread guide (Upper) | (7) Thread guide (upper) |
| (L2') Thread guide pin (right) | (L8) Take up lever (upper hole) |
| (L3) Pre-tension (upper) | (7) Thread guide (upper) |
| (L3') Thread guide pin (left) | (9) Thread guide (lower) |
| (L4) Thread tension regulator (upper) | (L10) Needle clamping (back) |
| (L5) Thread controller disc (back) | (L11) Needle (left) |

- (4) How to thread form the cotton stand spool (right).

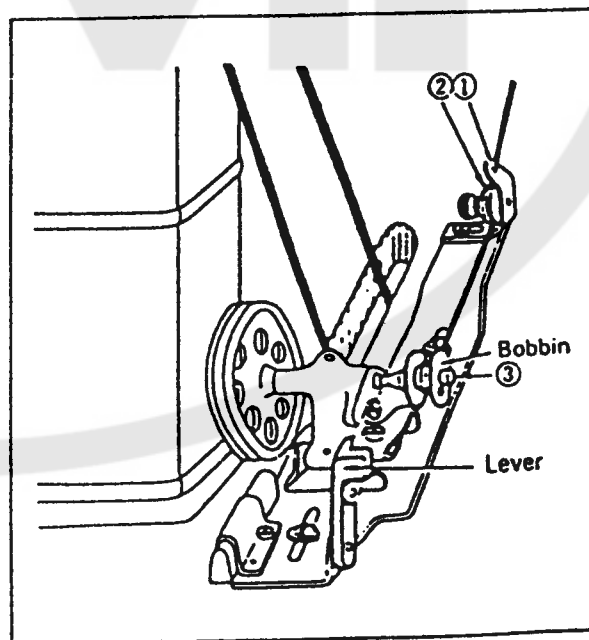
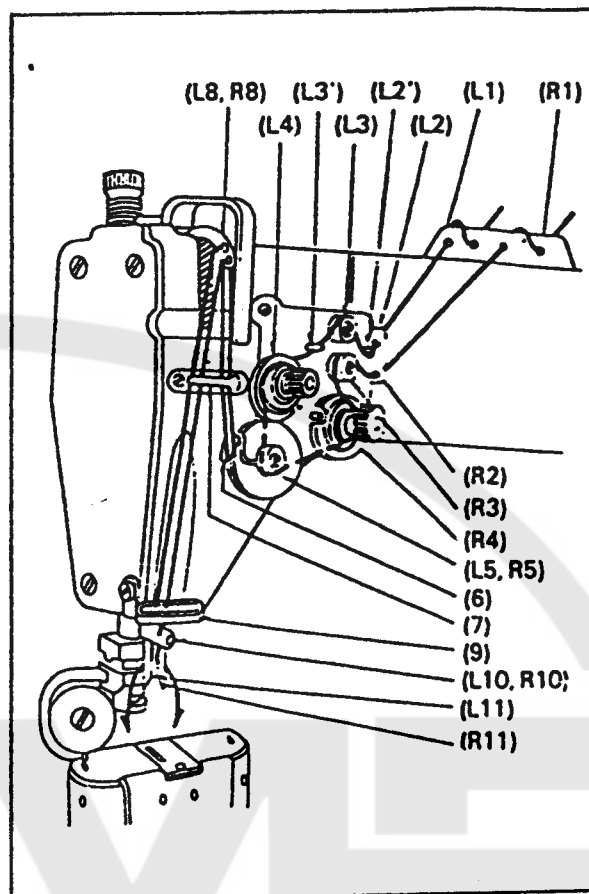
- | | |
|---------------------------------------|---------------------------------|
| (R1) Thread guide | (7) Thread guide (upper) |
| (R2) Thread guide (lower) | (R8) Take up lever (lower hole) |
| (R3) Pre-tension (lower) | (7) Thread guide (upper) |
| (R4) Thread tension regulator (lower) | (9) Thread guide (lower) |
| (R5) Thread controller disc (front) | (R10) Needle clamping (fornt) |
| (6) thread take up spring | (R11) Needle (right) |

To the pre-tension 3 and tension regulator 4 thread between these discs.
To the two needles 11., thread from the inside to outside.

4 HOW TO WIND THE LOWER THREAD ON THE BOBBIN.

- (1) Thread from the spool through the hole of the thread guide ① to the tension discs ②.
- (2) Wind the end of the thread through the tension discs ② on the bobbin about 5 ~ 6 times.
- (3) Fit the bobbin into the bobbin pin ③ in a manner so the thread can be wound on the bobbin from the underside.
- (4) Push the lever toward the other side so that the pulley at the belt will engage.
- (5) Operate the machine so that the thread can be wound on the bobbin.
- (6) The bobbin winder will automatically be free from the belt when the bobbin is fully wound with thread, and stopped.

This operation can be done while working.



Preparation for operation

5 HOW TO ADJUST THE BOBBIN WINDER ASSEMBLY.

It is desirable that the bobbin is wound evenly with thread as shown in Fig. (A), but Fig. (B) & (C) shown are not proper winding.

Adjust the bobbin winder assembly in the following order so as able to wind the thread onto the bobbin properly.

1) In case of uneven winding.

In the event of uneven winding toward the left, loosen the screw (A) of the thread guide, and adjust it moving the thread guide slightly to the right.

In the event of uneven winding toward the right, adjust it moving the guide to the left.

After adjusted, tighten the screw (A) of the thread guide.

2) Winding strength of thread.

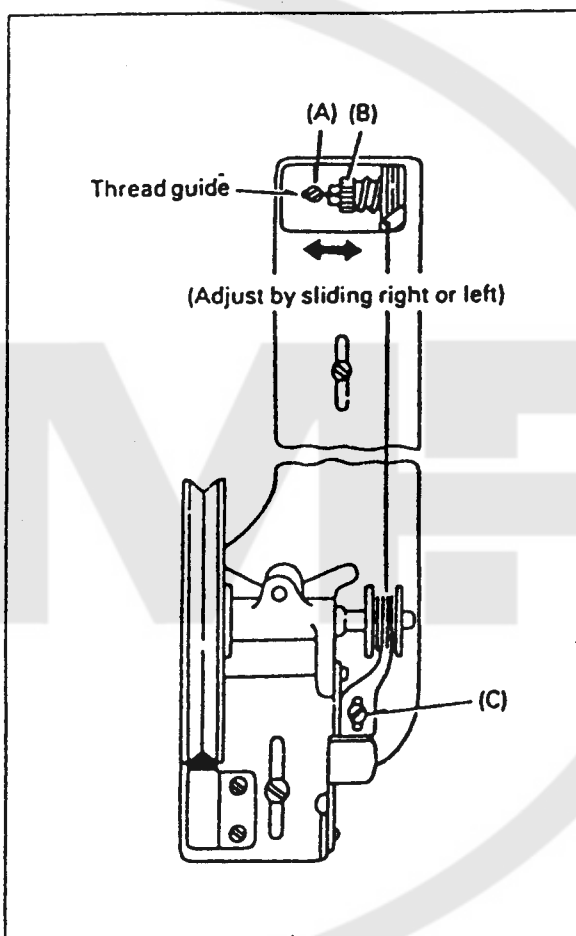
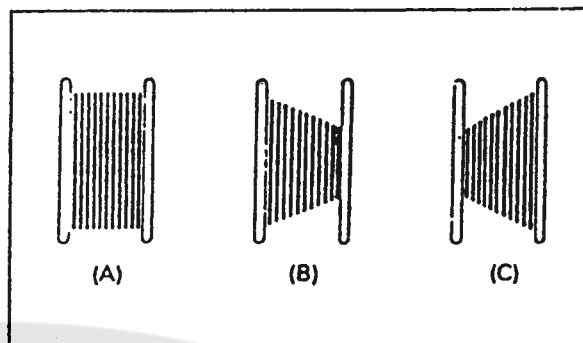
When the thread (particularly nylon thread) is wound too tightly, there is a tendency to unwind the thread on a bobbin.

In this case adjust the pressure of tension discs with nut (B) so that thread can be pulled out smoothly.

3) Winding amount of thread.

Best results are obtained when the bobbin is wound up to 4/5 of its full capacity with thread. Excessive winding will results in poor pull-out the thread

In the event of excessive winding, turn the screw (C) to the left, and to the right when insufficient.

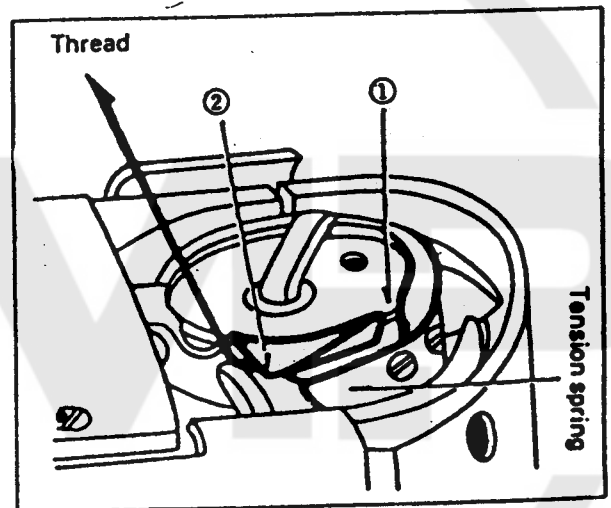
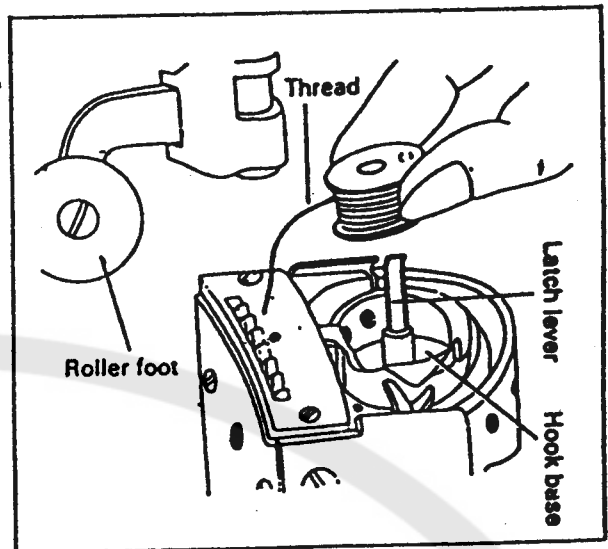


Preparation for operation

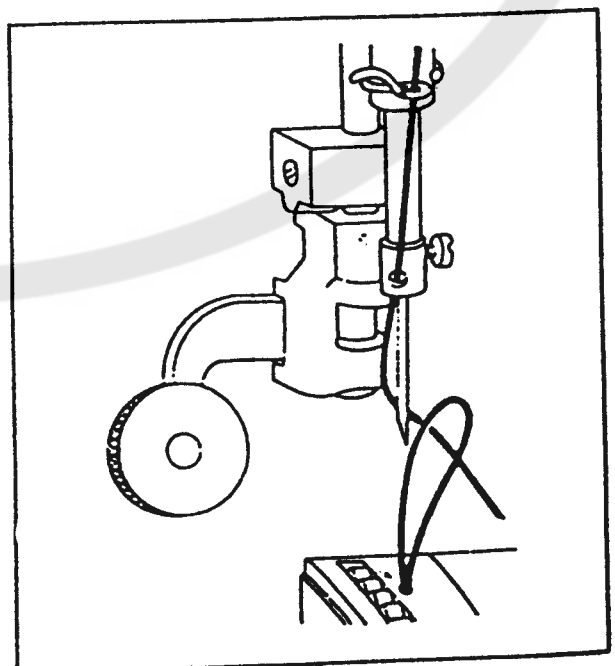
6 HOW TO PLACE THE BOBBIN INTO THE HOOK.

In case of ONE Needle Type

- (1) Raise the needle bar to its highest position turning the balance wheel by hand.
- (2) Move the roller foot to the left as shown in Fig.
- (3) Move the slide plate.
- (4) Turn up the latch lever as shown in Fig.
- (5) Pull the bobbin thread for about 5cm, hold it like in the illustration.
- (6) Fit the bobbin, into the hook base.
- (7) Flap down the latch lever.
- (8) Insert the pulled out thread end through the slit ① in the hook body.
- (9) From the slit ① pass the thread underneath the hook body ②, and pull it to the right diagonally, and the thread will pass through tension spring.
- (10) Leave the end of thread inserted through to the tension spring as it is.



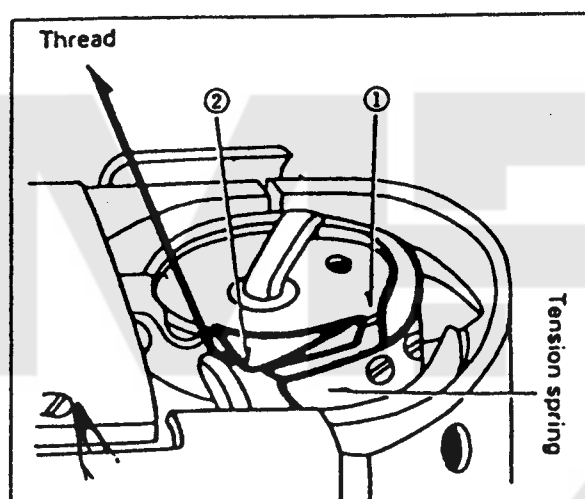
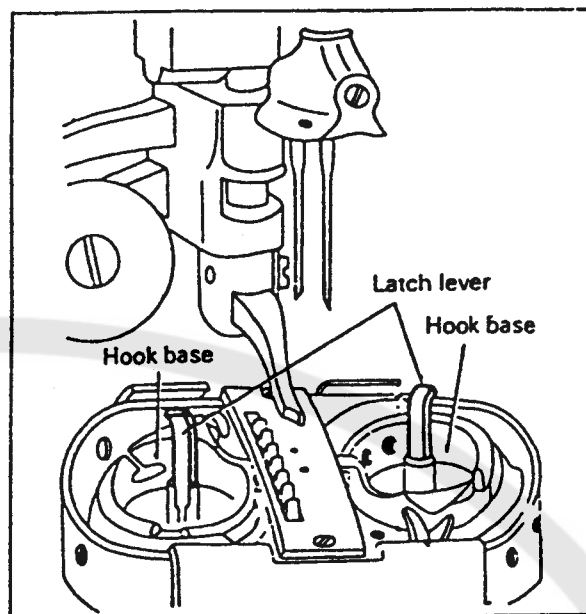
- (11) While holding the end of upper thread by left hand, turn the balance wheel slowly once around by right hand.
- (12) Then the upper thread will hook out the lower thread simultaneously through the hole of needle plate, and leave the lower thread to other side of the needle plate.
- (13) After placing the bobbin, close the slide plate.



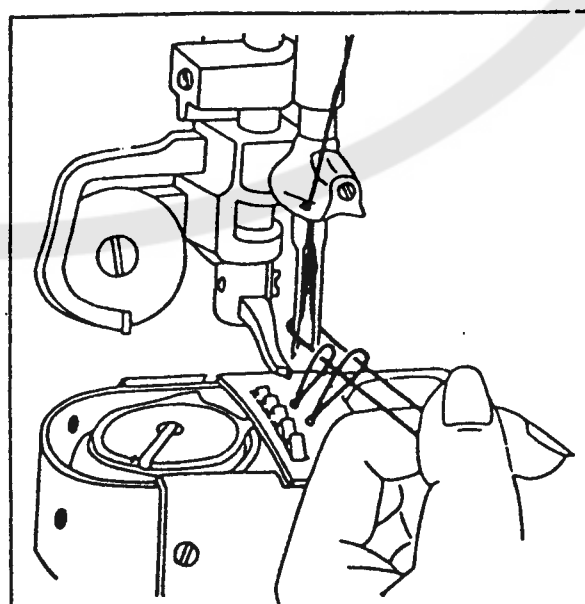
Preparation for operation

In case of Two Needle Type

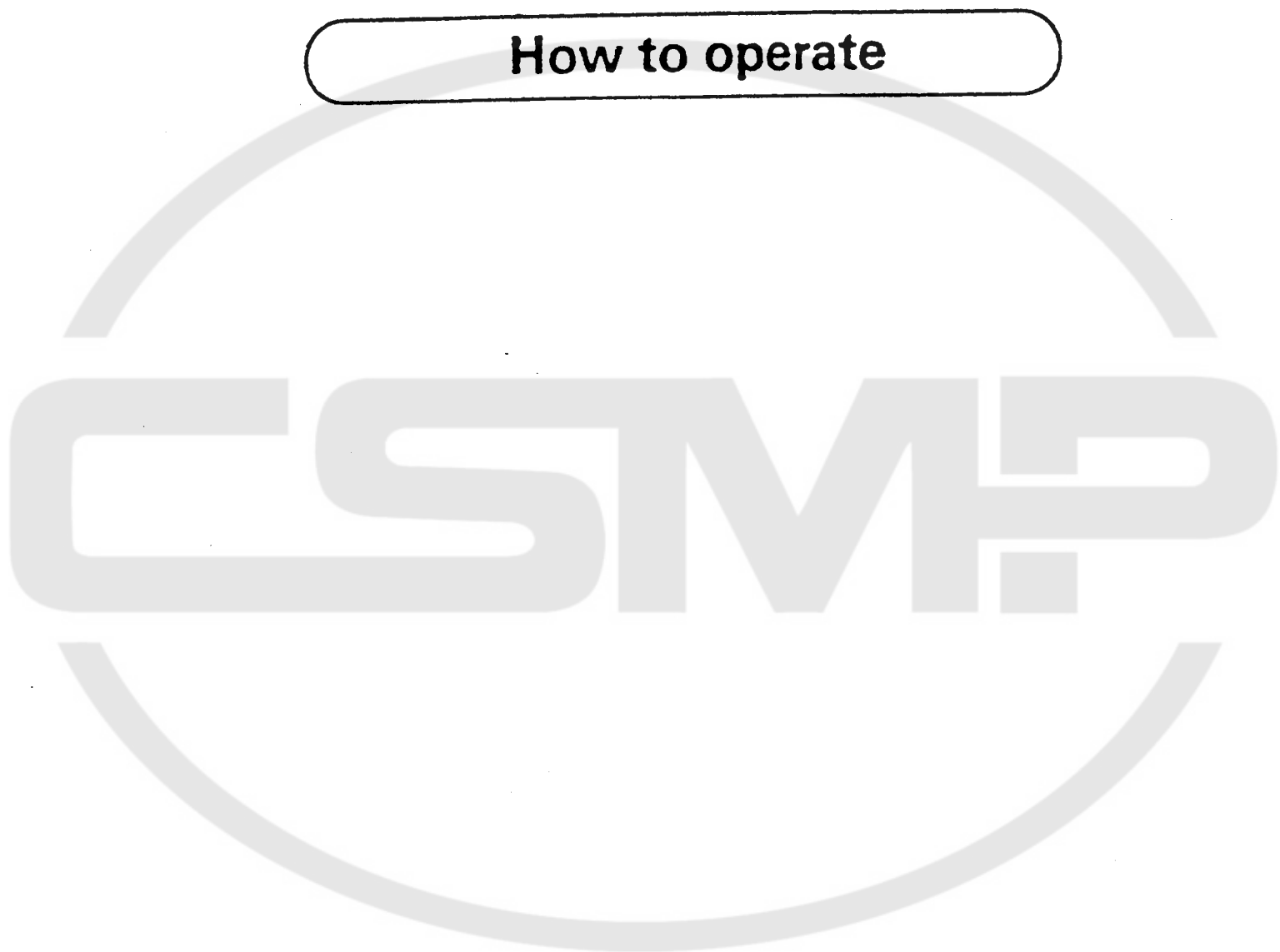
- (1) Raise the Needle bar to its highest position turning the balance wheel by hand.
- (2) In the event of the roller foot is attached, move it to the left as shown in Fig.
- (3) Move the both slide plate.
- (4) Turn up the both of the latch lever as shown in Fig.
- (5) Pull out the bobbin thread for about 5 cm. and hold the bobbin
- (6) Fit the bobbin into the both hook base.
- (7) Flap down the both latch lever as it was.
- (8) Insert the pulled thread end through slit ① of the hook.
- (9) From the slit ① of the hook, pass the thread through underneath of the hook body ②, pull the left thread to the left and the right thread to the right diagonally and the thread will pass through the tension spring as shown in Fig.
- (10) Leave the end of the thread inserted through the tension spring as it is.



- (11) While holding the end of 2-upper thread by left hand, turn the balance wheel slowly once around by right hand.
- (12) Then the 2-upper thread will hook out pulling the lower thread simultaneously through the hole of needle plate, and leave the lower thread to the other side of the needle plate as shown Fig.
- (13) After placing the bobbin, close the both of the slide plate.



How to operate

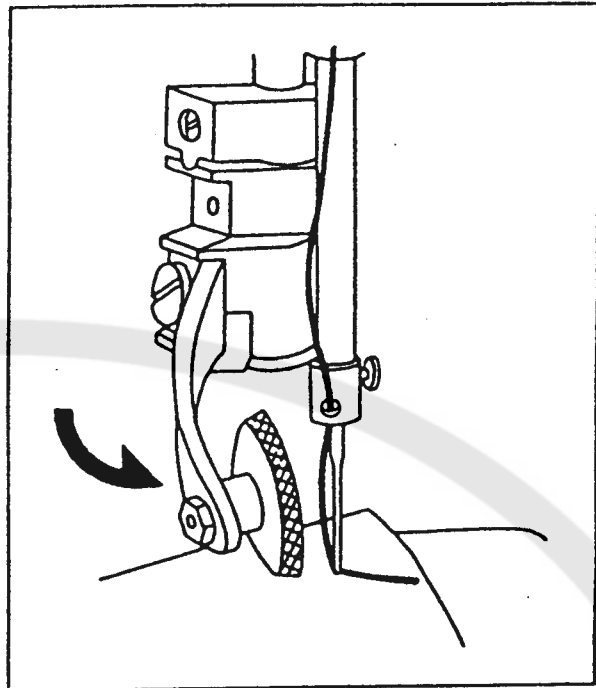


How to operate

1 STARTING TO SEWING.

- (1) Raise the presser bar lifter.
- (2) Move back the roller foot toward your side as shown in Fig. by the arrow.
- (3) Place starting end of the materials for stitching under the needles.
- (4) Turn the balance wheel by hand toward your side so that the needle stitches the materials.
- (5) Lower the presser bar lifter and start to sew.

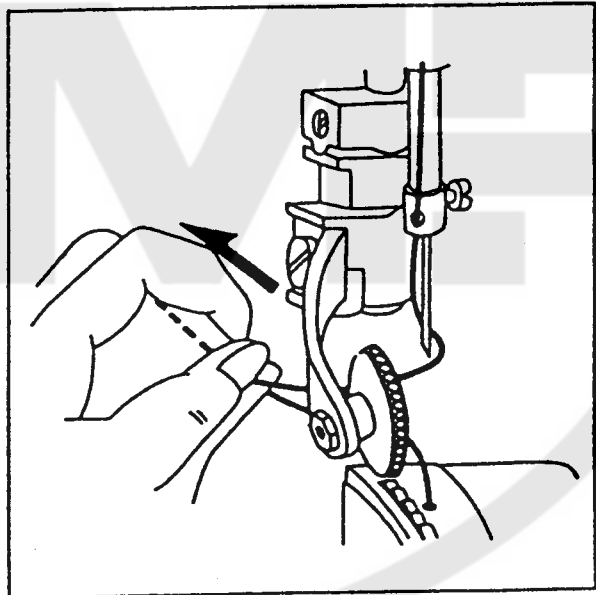
* When starting to sewing, leave the upper thread pulled out by approx. 10cm in length so that it will not pull out from needle.



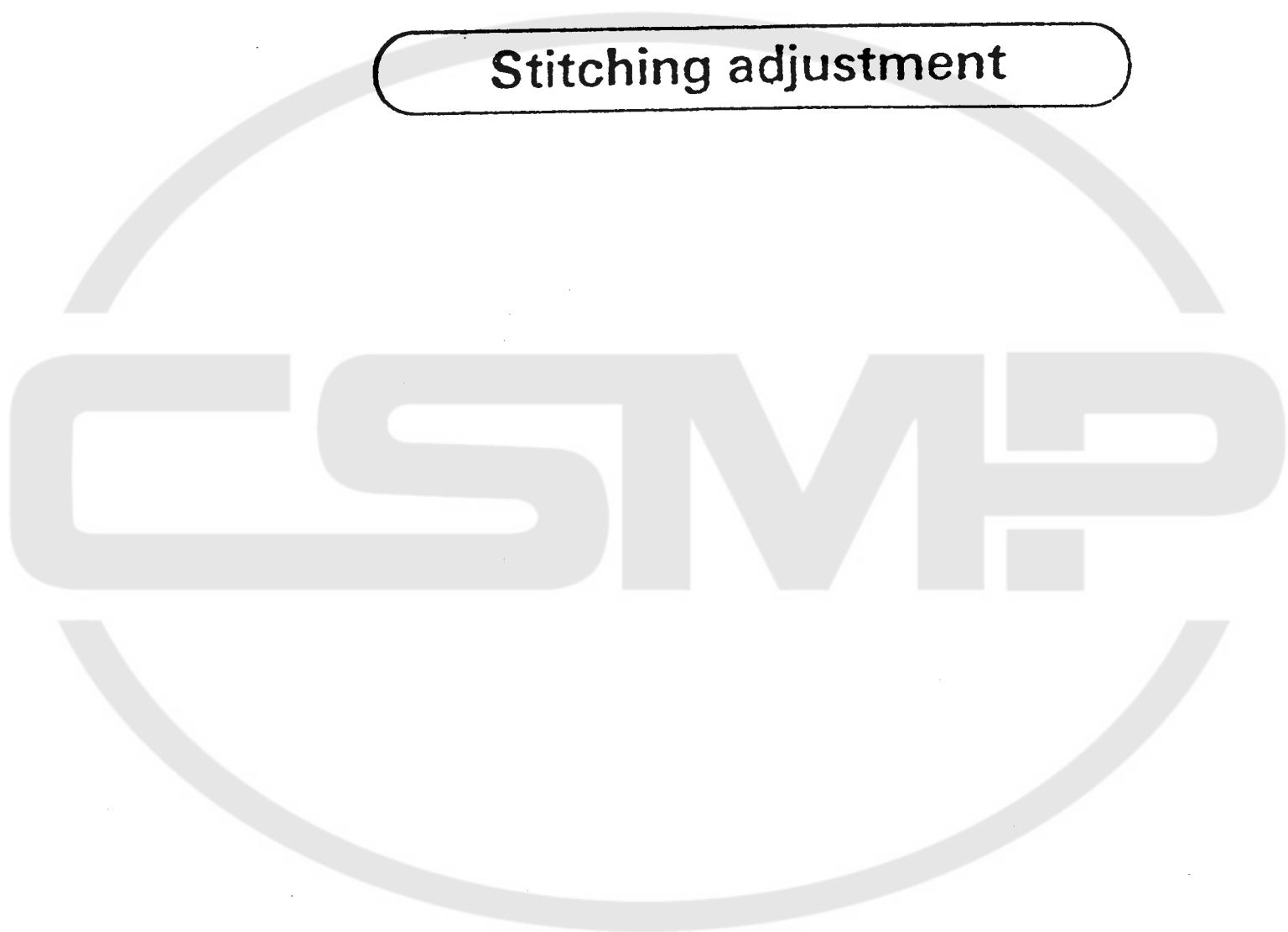
2 SEWING OVER.

- (1) Stop sewing when the take up lever comes to its highest position.
- (2) Raise the presser (roller or ordinary) foot.
- (3) Pull out the stitched fabrics diagonally to the left side.
- (4) Cut both upper and lower thread.

* When cutting the thread leave out approx. 10cm length so that next starting sew is convenient for you.



Stitching adjustment

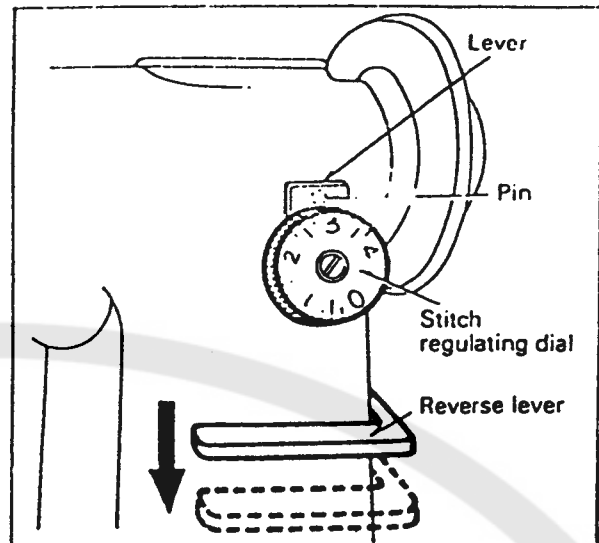


Stitching adjustment

1 ADJUSTMENT OF STITCH LENGTH.

Stitch length can be adjusted with lever pushed and the stitch regulating dial.

Figures on the stitch regulating dial indicates the length in mm. When the dial number is set on the pin of the arm it will give your desired stitch length.



2 REVERSE STITCHING.

Reverse stitching can be operated by means of pushing the reverse lever downward. While the lever is pressed downward, reverse stitching can be made.

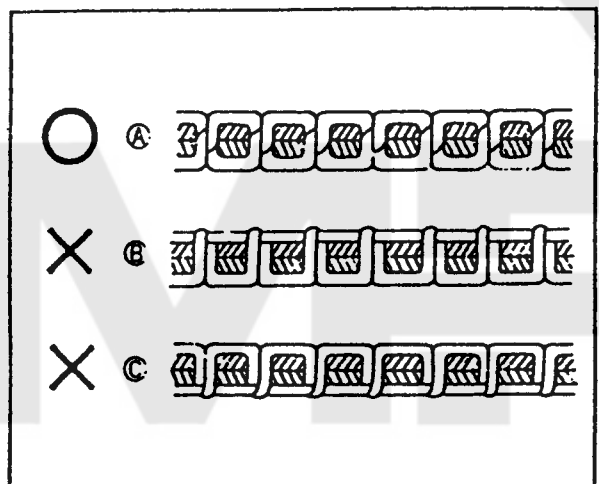
3 ADJUSTMENT OF THREAD TENSION.

The thread tension varies according to the type of materials to be sewn, or thread used, and the length of the stitches required, so adjust the tension accordingly.

If the upper and lower thread tension are well balanced, the two threads will link together in the middle of the fabrics to provide perfect chain-like stitches (A) as shown in Fig.

If, either the upper or lower thread tension is too tight, or too loose, it will give imperfect stitches such as (B) and (C) as shown in Fig.

Fig. (B) shows the upper thread tension is too tight, and Fig. (C) the upper thread tension is too loose.



■ Tension of upper thread

Adjustment of the upper thread tension can be achieved by changing the pressure of the tension discs of the regulator, as well as the strength and operating range of the thread take-up spring.

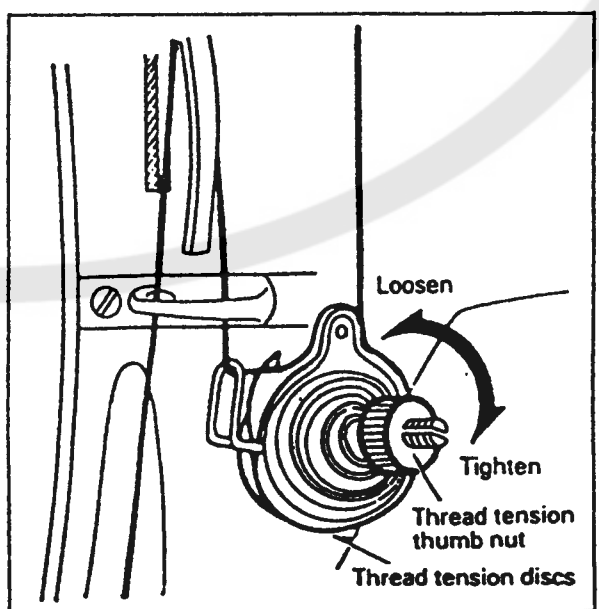
In case of one Needle Type

1) Pressure of the thread tension discs.

For general fabric stitching, the desired tension can be obtained just by adjusting the pressure of the tension discs.

To tighten, turn the thread tension nut to the right.

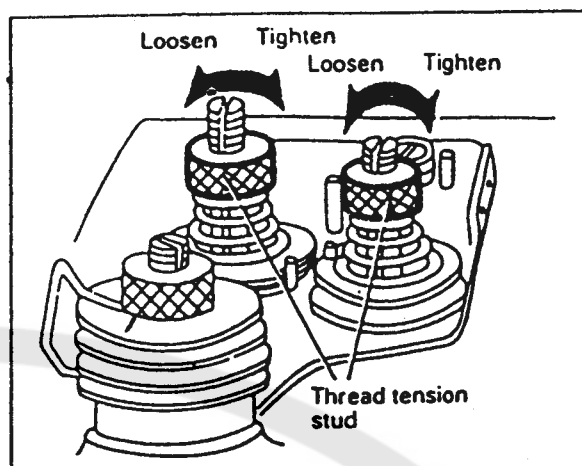
To loosen, turn to the left.



Stitching adjustment

In case of Two Needle Type

To tighten the pressure of thread tension discs, turn the thread tension nut to the right.
To loosen, turn the tension nut to the left.



2) Strength of the thread take up spring.

Adjust the strength of the take-up spring according to the materials to be stitched.

Standard materials Approx. 25g.

Light materials (small stitch length)

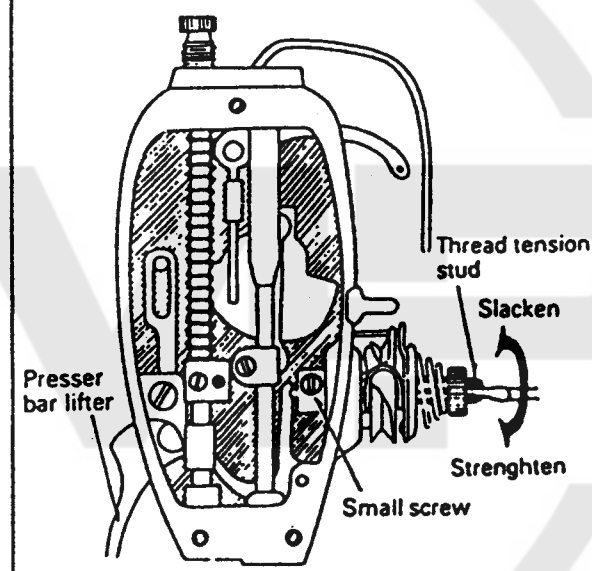
heavy materials (large stitch length)

Strengthen the spring approx. 30g.

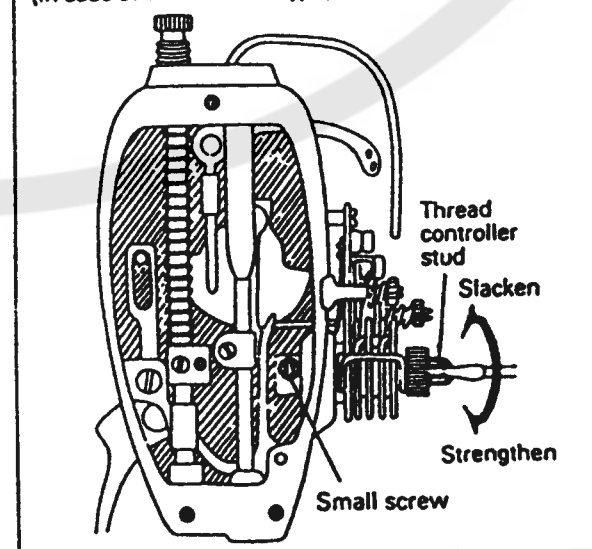
How to adjust.

- (1) Leave the presser bar lifter down.
- (2) Remove the face plate.
- (3) Loosen the small screw inside of the face plate as shown of the upper thread tension regulator (one needle type) or of the thread tension controller (two needle type)
- (4) Fit screw driver into the groove of the thread tension stud, or thread controller stud, and turn stud to the left to strengthen, and to the right to slacken.
- (5) After adjusted, tighten the small screw and put the face plate back on.

(In case of One Needle Type)



(In case of Two Needle Type)



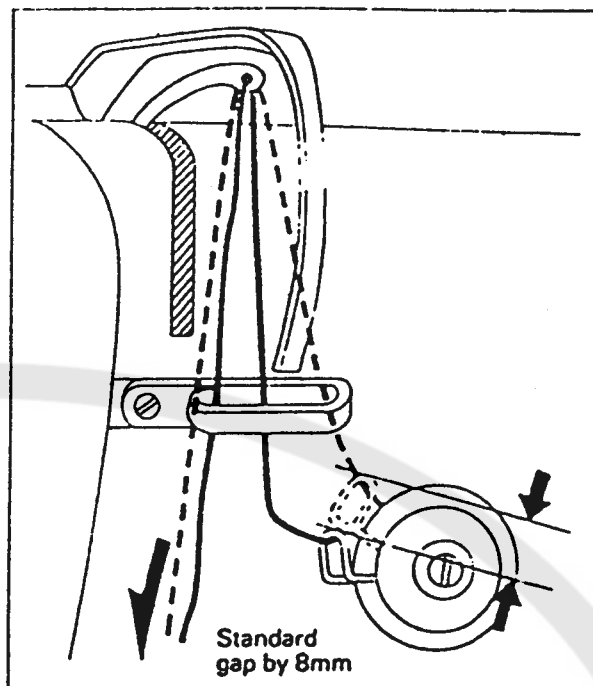
Stitching adjustment

3) Operating range of the thread take up spring.

In order to obtain proper working condition, it is necessary to adjust the strength of the take up spring as well as change the operating range of the take-up spring.

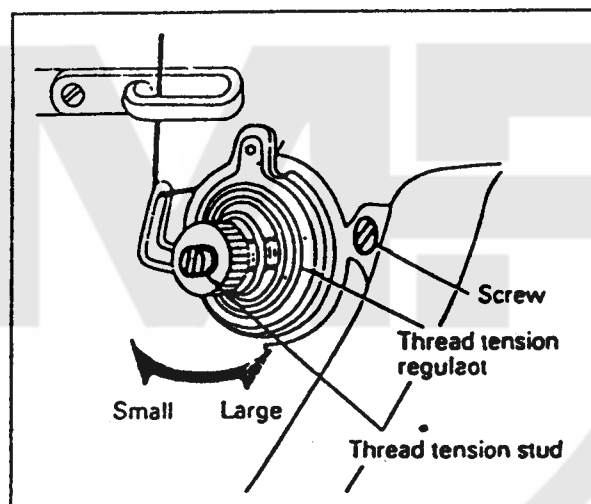
The operating range can be measured when the take-up lever is at the highest position, and when the upper thread is pulled, and the tension spring moves within the width of 8mm, it is considered as standard.

- In case of stand (general fabrics) materials approx. 8mm (5/16")
- In case of light (small stitch length) materials, increase the operating range slightly approx. 8mm (5/16") or up
- In case of heavy (large stitch length) materials, decrease the operating range slightly approx. 8mm (5/16") or less



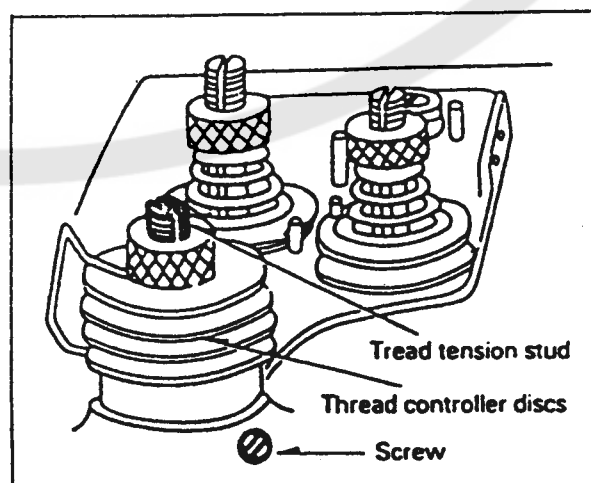
How to adjustment (One Needle Type)

- (1) Lower the presser bar lifter.
- (2) Loosen the thread tension regulator set screw.
- (3) Fit the screw driver into the groove of the tension regulator stud, and turn the stud to the right to small the operating range.
- (5) Turn the stud to the left to large the operating range.
- (6) After adjusted, tighten the screw.



How to adjust (Two Needle Type)

- (1) Loosen the thread controller set screw.
- (2) Fit the screw driver into the groove of the thread controller stud, and turn the stud to the right to small the operating range.
- (3) Turn the stud to the left to large the operating range.
- (4) After adjusted, tighten the screw.

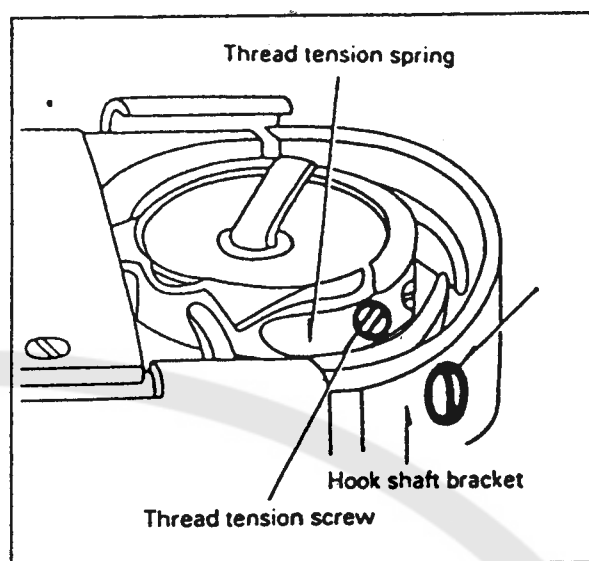


Stitching adjustment

■ Tension of lower thread.

There is virtually no need to adjust the lower thread tension, except for special kind of fabrics or thread, when slight adjustment will be necessary.

- (1) Turn the balance wheel by hand, and stop when the thread take-up lever comes down to its lowest position.
- (2) Move the slide plate to that you find the thread tension screw of the hook base.
- (3) Fit the screw driver into the hole (A) of the hook shaft bracket as shown in Fig. Turn the tension screw to the right to strengthen the thread tension.
- (4) Turn the screw to the left to weaken the thread tension.



4 ADJUSTMENT OF FEED DOG HEIGHT AND PRESSURE OF PRESSER ON MATERIALS.

The feed dog height and pressure of presser on materials must be properly adjusted according to the materials to be sewn.

In case of light materials: The material may be damaged if the feed dog is raised excessively or the pressure of presser on materials is too strong.

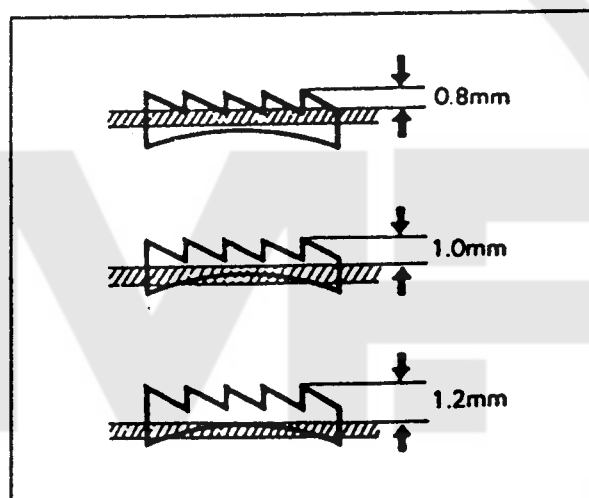
In case of heavy materials: It will not make uniform stitching if the feed dog is not raised properly or the pressure of presser is too weak.

In case of light materials approx. 0.8mm in height

In case of general fabrics approx. 1.0mm. in height

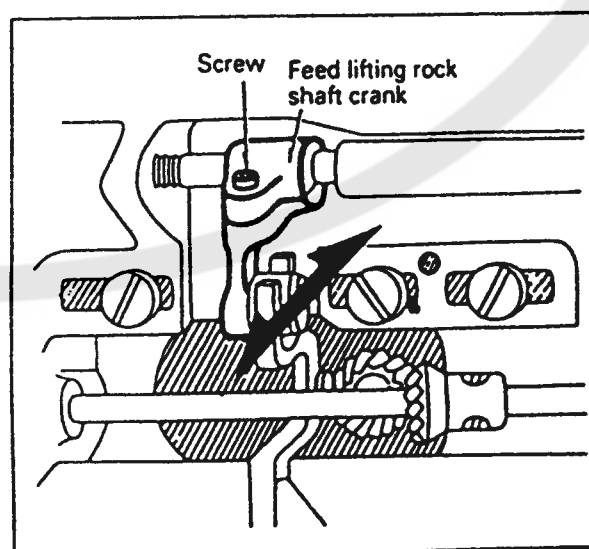
In case of heavy materials approx. 1.2mm. in height

- The height of feed dog is measured when the feed dog is raised to its highest position from the surface of needle plate turning the balance wheel by hand.



1) Adjustment of feed dog height.

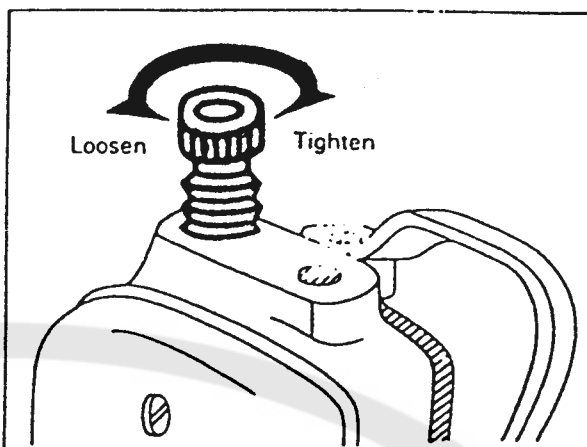
- (1) Lay down the machine bed toward the other side.
- (2) Remove the gear box
- (3) Turn the balance wheel by hand and stop when the feed dog is raised to its highest position from the surface of needle plate.
- (4) Loosen the screw of feed lifting rock shaft crank.
- (5) Adjust the feed dog to the desired height moving the feed lifting rock shaft crank back and forth as per as arrow shown in Fig.
- (6) After adjusted, tighten the screw of feed lifting rock shaft.



Stitching adjustment

2) Adjustment of pressure of presser foot.

- (1) Turn the presser regulating thumb screw to the right to strengthen the pressure of presser foot.
- (2) Turn the screw to the left to loosen the pressure of presser foot.

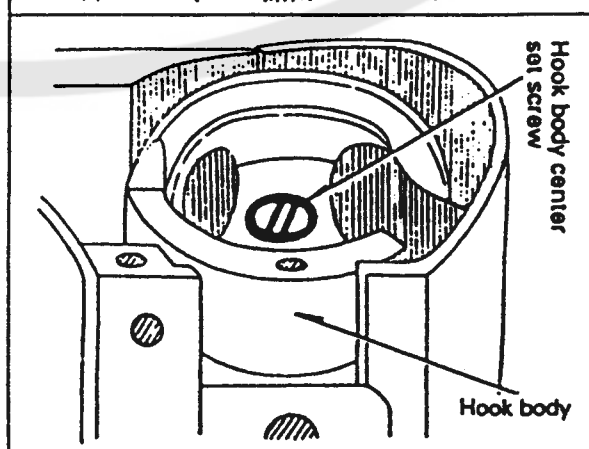
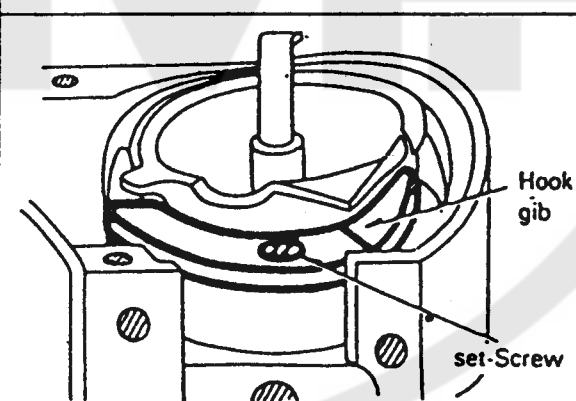
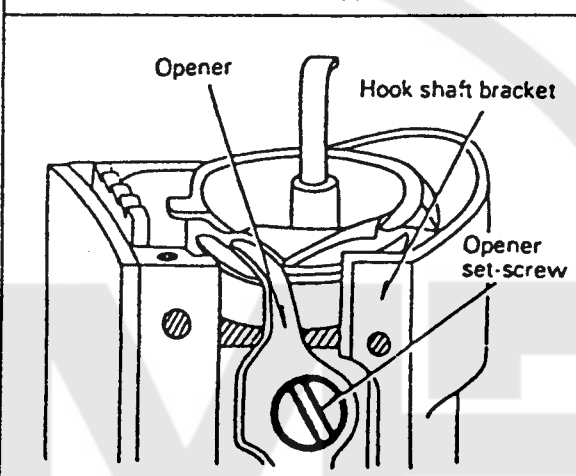


5 PROPER TIMING BETWEEN HOOK AND NEEDLE.

Place and adjust the hook in the condition described below in case of the thread gets entangled in the hook, or when its position is changed due to shock, or other causes, or when it is replaced with new a one.

1) How to remove the hook:

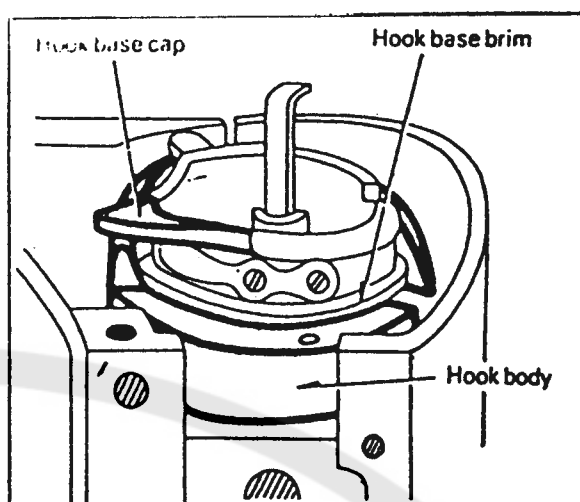
- (1) Turn the balance wheel by hand and stop when the thread take up lever comes down to its lowest position.
- (2) Remove the slide plate, then take out the bobbin.
- (3) Remove the needle plate.
- (4) Remove the hook cover plate (front) (In case of two needle type, remove the hook cover plate (upper) both the front and back.)
- (5) Remove the hook opener screw, and then remove the opener.
- (6) Loosen the hook gib screw and remove the hook gib fixed in front of the hook body as shown in Fig.
- (7) Hold the latch lever up turning it slightly so that it can be taken out.
- (8) Remove the hook body center set screw so that it can be taken out.



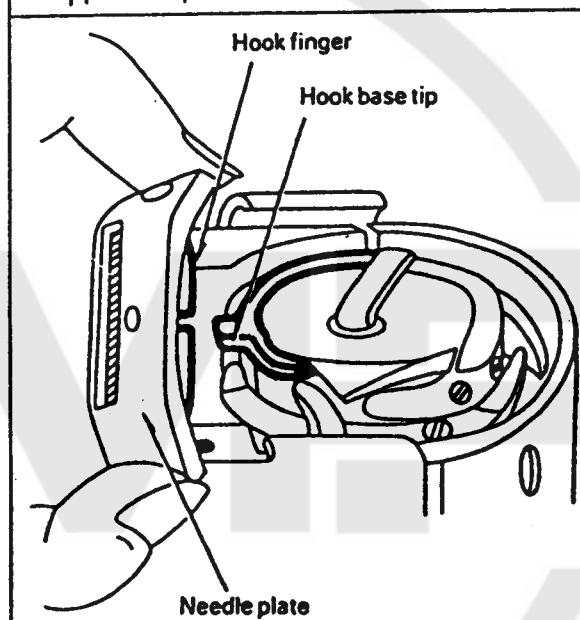
Stitching adjustment

2) How to place the hook:

- (1) Place the hook in backward order from removing procedure.
- (2) When placing the hook body, remember to place it at the same position as it was taken out.
- (3) When inserting the hook base hold the hook base cap turning it to the left as shown in Fig., and fit the hook base brim into slot of the hook body on the inside of the other side.



- (4) When placing the needle plate, place the needle plate adjusting the hook base so that the tip of hook base fits into the hook finger of the needle plate as shown in Fig.



3) The position of the hook and needle:

As shown in the Fig., when the needle raised is 2.0mm from its lowest position of the needle, the hook and needle should be as follows.

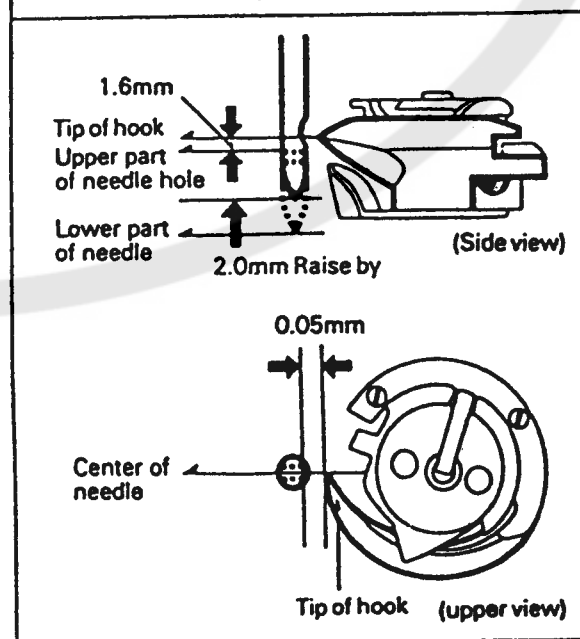
Upper part of the needle hole
..... Lower by 1.6mm from the tip of hook.

Tip of hook At center of needle.

Gap between tip of hook and lateral face of needle by 0.05mm.

Adjustment of the relative position of the hook and needle can be done as follows:

- Move the roller foot to the left, remove the needle plate for easy adjustment.

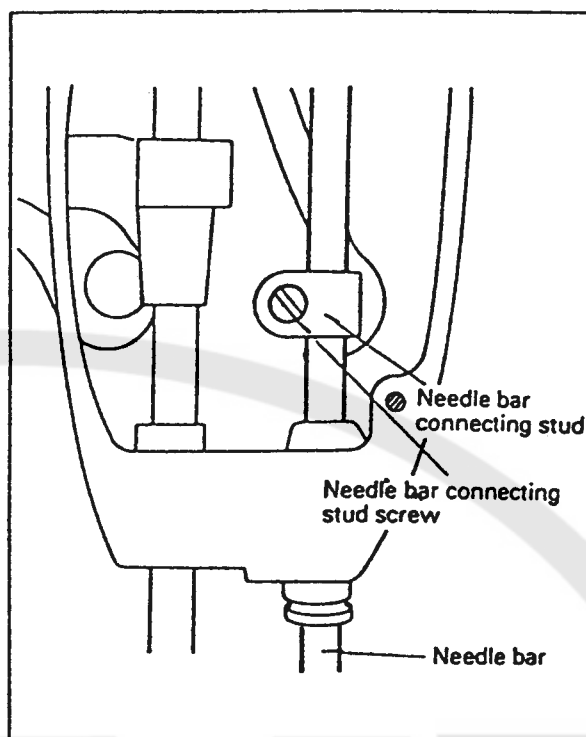


Stitching adjustment

■ Adjustment of needle bar position.

Adjust the needle bar timing so that the gap between the tip of hook and the upper part of needle hole will be 1.6mm when the needle is raised by 2.0mm from its lowest position.

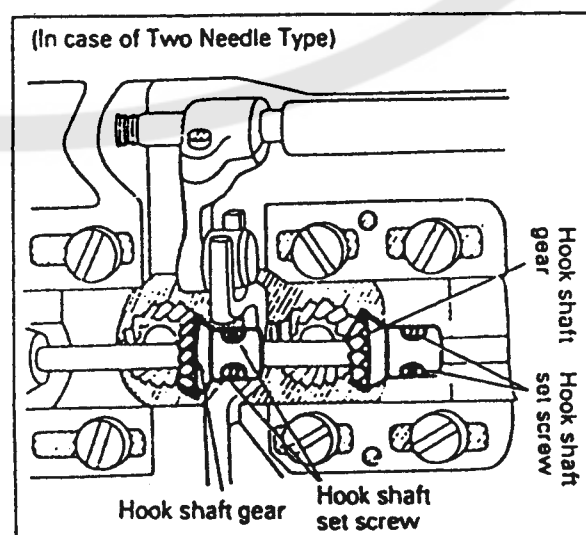
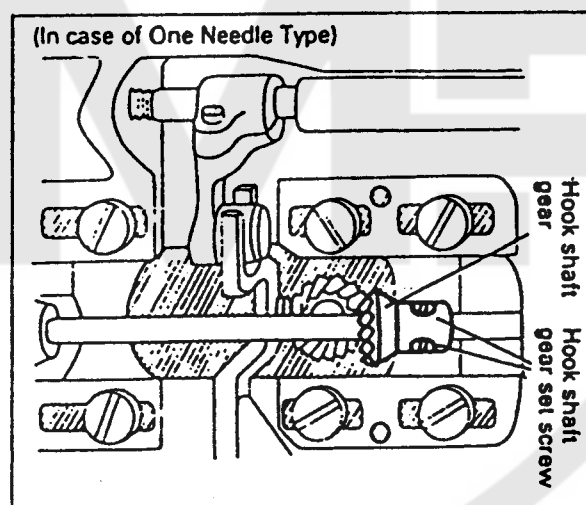
- (1) Raise the needle bar by 2.0mm from its lowest position turning the balance wheel by hand.
- (2) Loosen the needle bar connecting stud screw.
- (3) Adjust moving the needle bar up and down so that the tip of hook comes at the position by 1.6mm from the upper part of needle hole.
- (4) After adjusting the needle bar position, tighten the needle bar connecting stud screw.



■ Adjustment of tip of hook.

Adjust so that the tip of hook comes to the center of needle.

- (1) Remove the needle plate and slide plate.
- (2) Lay down the machine head toward the other side.
- (3) Remove the gear box.
- (4) Loosen the two set screws of the hook shaft gears.
- (5) Turn the balance wheel by hand, and stop when the needle is raised 2.0mm from its lowest position.
- (6) Turn the hook by hand enabling the tip of hook to come to the center of needle.
- (7) After adjusting, tighten the two set screws of the hook shaft gears.
- (8) Place the gear box.



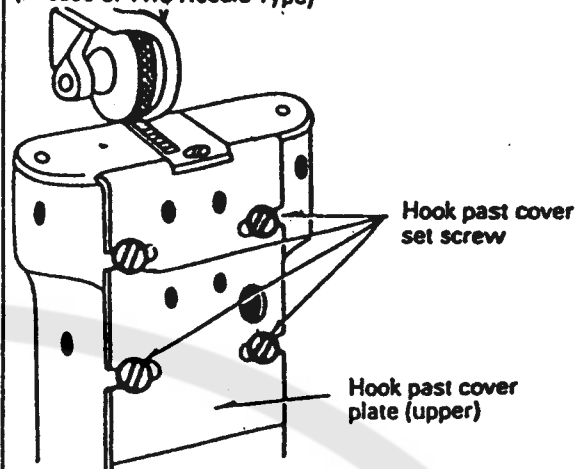
Stitching adjustment

Adjust that the gap between the tip of hook and lateral side of the needle to come to 0.05mm.

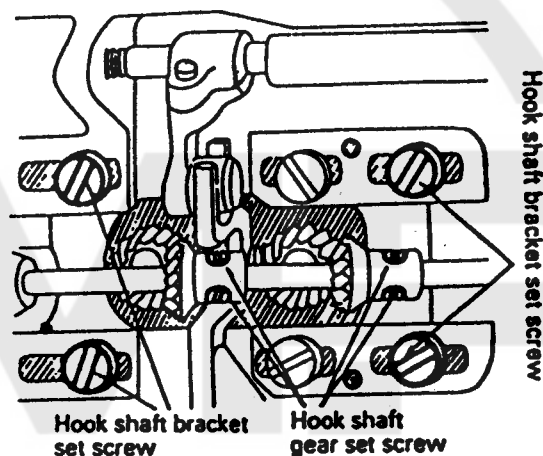
In case of 1-needle, there is virtually no need to adjust it. However, in case of 2-needle, it is necessary to adjust it when changing the needle gauge sizes.

- (1) Loosen the screws of the hook post cover plate (front and back).
- (2) Lay down the machine head toward the other side.
- (3) Remove the gear box.
- (4) Loosen the hook shaft gear set screws.
- (5) Loosen the set screws of hook shaft bracket.
- (6) Turn the balance wheel by hand, and stop when the needle is raised by 2.0mm from its lowest position.
- (7) Turn the hook by hand and bring the tip of hook to the center of needle.
- (8) Move the hook shaft bracket of the right and left, so that the gap between the tip of hook and lateral side of needle is 0.05mm.
- (9) After adjusting tighten the set screws of hook shaft gear and bracket.
- (10) Place the gear box.

(In case of Two Needle Type)

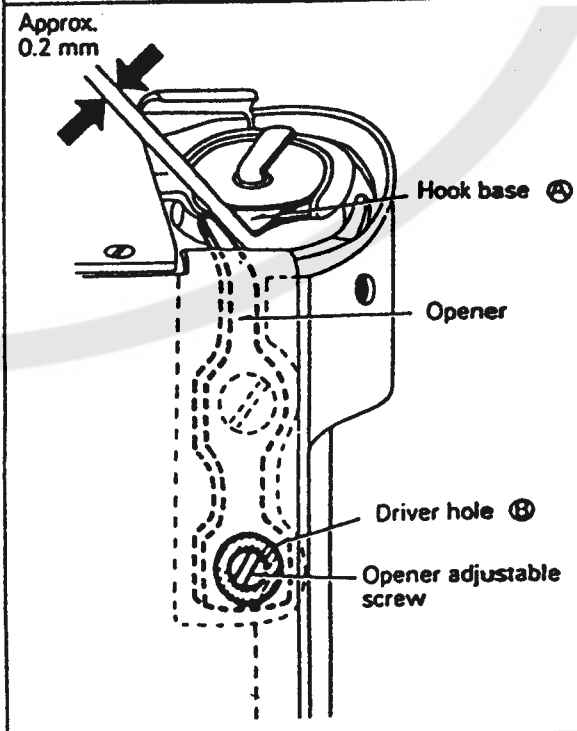


(In case of Two Needle Type)



6 PROPER TIMING BETWEEN HOOK AND OPENER.

- (1) Remove the slide plate.
- (2) Turn the balance wheel by hand, and stop at the position where the opener and the needle plate are furthest apart.
- (3) Check whether the gap between the part of hook base (A) and the opener is approx. 0.2mm as shown in Fig.
(there is a slight difference according to the thread to be used.)
- (4) In case the gap is too wide or narrow, adjust it fitting the screw driver into a driver hole (B) of the hook shaft bracket, then loosen the opener adjustable screw and moving the opener to the right or left.
- (5) After adjustment, tighten the opener adjustable screw.



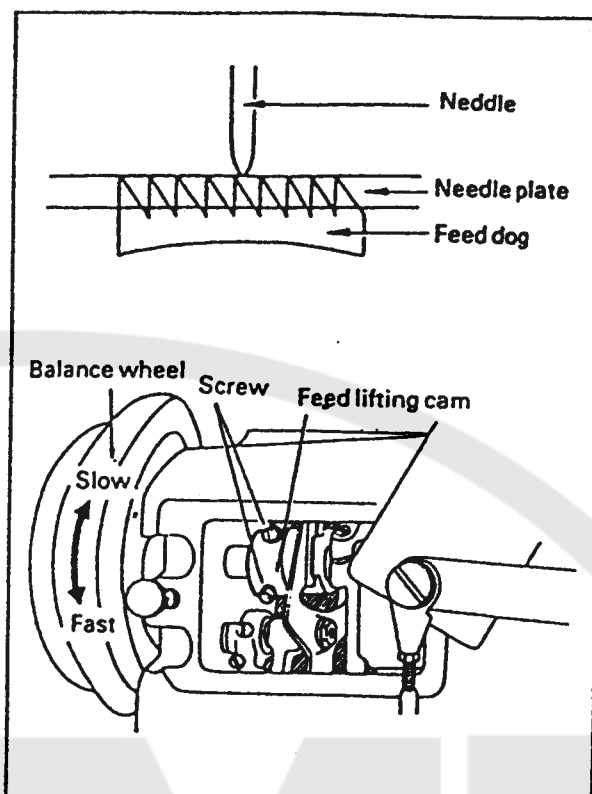
Stitching adjustment

7 PROPER TIMING BETWEEN FEED DOG AND NEEDLE.

The proper timing of the feed dog and needle will be when the material is fed through and the needle tip reach to the needle plate surface, just at the moment the feed dog begins to sink downward through the needle plate surface as shown in Fig.

This adjustment is based on the feed dog height is at 1.0mm.

- (1) Loosen the arm side cover thumb screw.
- (2) Move the side cover to the right, and open to upper side as shown in Fig.
- (3) Loosen the set 2-screws of the feed lifting cam.
- (4) While holding the feed lifting cam by hand, turn the balance wheel toward your side so that feeding device will be faster.
- (5) In order to slow the feeding device, turn the balance wheel toward the other side.
- (6) After adjustment, tighten the set screws of the feed lifting cam.



Cleaning and Lubrication



Cleaning and Lubrication

1 Cleaning.

The teeth of feed dog, hook, upper thread tension regulator discs, and thread controller discs are often covered by dust and lint causing improper operation and uneven stitching. Therefore, clean as often as necessary.

2 Lubrication.

Lubrication is one of the most important phases of the machine maintenance. With improper lubrication, excess abrasion of machine parts will cause to shorten the life of the machine. Therefore, lubricate in the order as follows:

1) The number of times for lubrication.

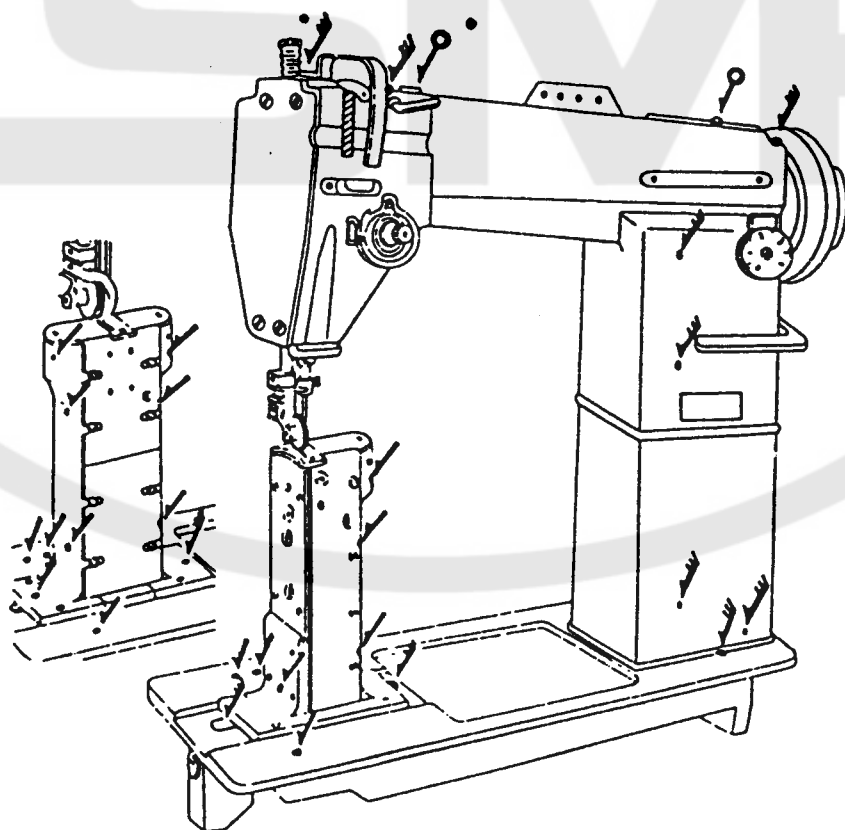
- | | |
|---|------------------------|
| (1) Usual working | at 2-3 times per week. |
| (2) Continuous working, every day | once each day |

2) Volume of lubrication:

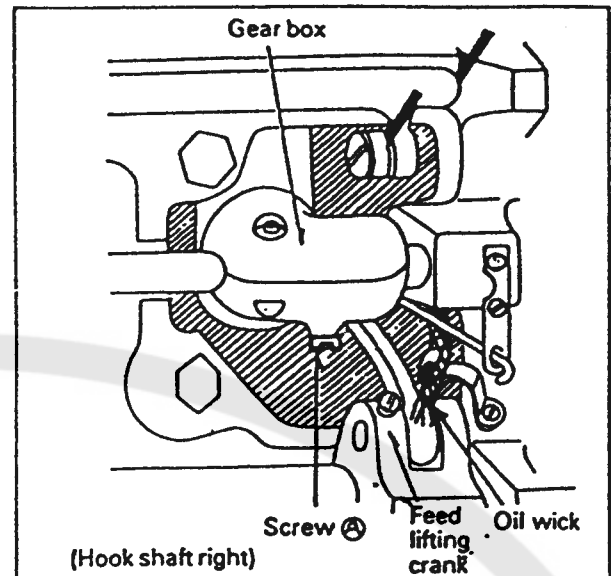
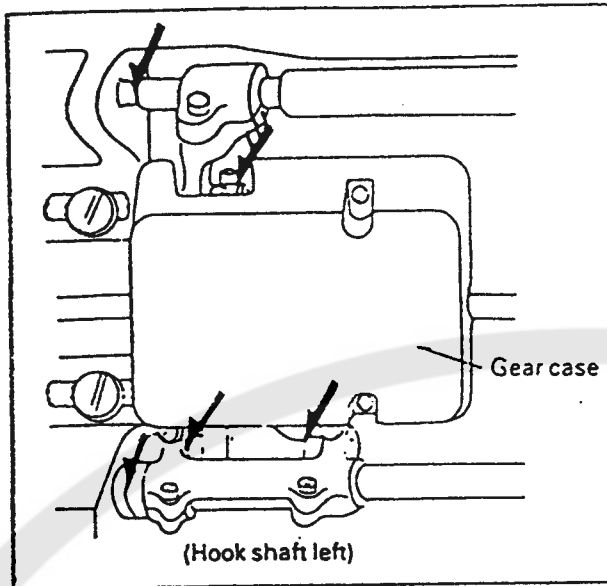
- | | | | |
|--------|----|--------------|---------------------|
| Places | •→ | marks | approx. 5cc or more |
| Places | ↘ | marked | approx. 5-6 drops |
| Places | → | marks | approx. 1-2 drops |

3) Places where to lubricate.

Lubricate the place where arrow is shown in Fig.
(inside of face plate, arm bed)



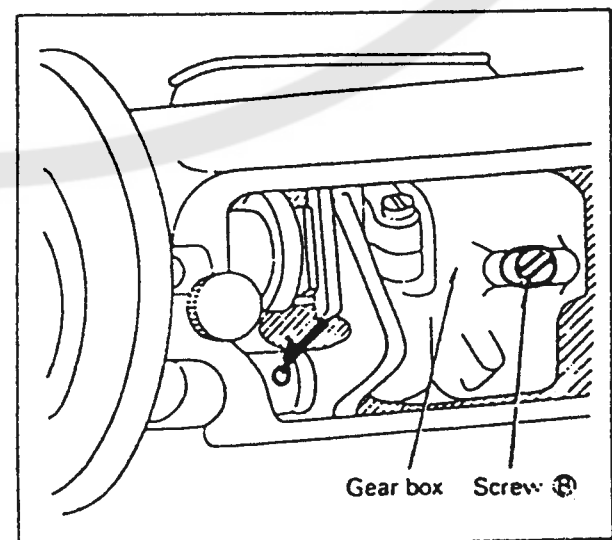
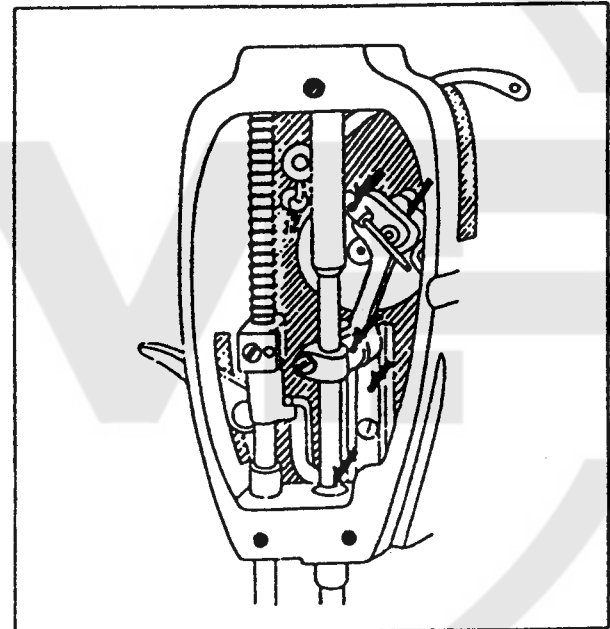
Cleaning and Lubrication



- Since the oil wick connected with the feed lifting crank for the right side of hook shaft is worked to flow oils, penetrate oil fully before working (if the oil wick is not penetrated with oil, it has no effect to flow oil).

1 GREASE

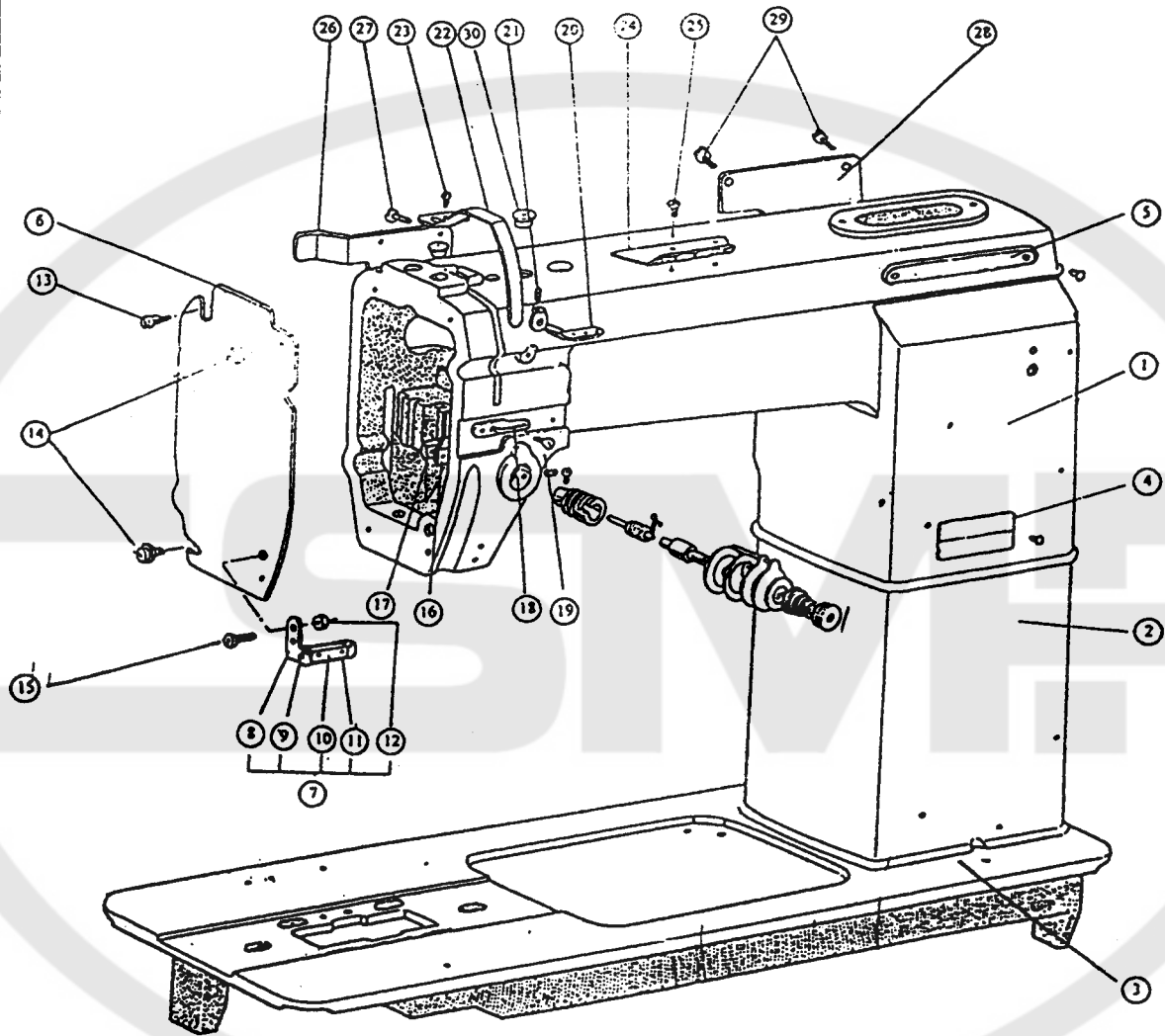
- 1) Remove the oil hole screws (A) & (B), of the gear box fixed to arm and hook shaft, then grease into the holes periodically.
- 2) Remove the gear case of the left side of hook shaft, then also grease into the gears sufficiently.





TABLES OF PARTS

1

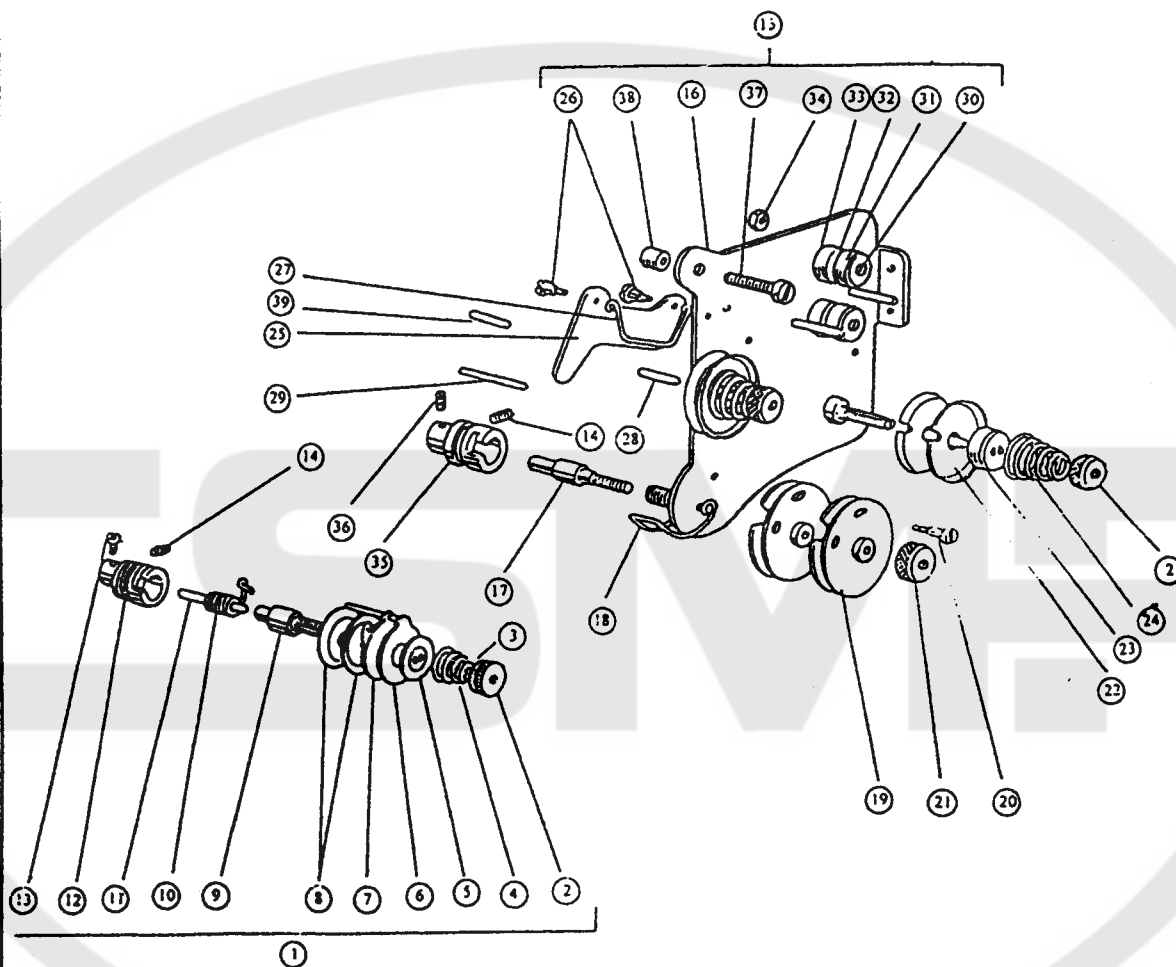


1. ARM BED AND IT'S ACCESSORIES

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H1-002A1	Arm	1	1	
2	24H1-002A2	Column	1	1	
3	24H1-002A3	Bed	1	1	
4	24H1-003B1	Model mark plate	1		
4	25H1-001A	Model mark plate		1	
5	24H1-003B2	Trade mark plate	1	1	
6	24H1-004C1	Face plate	1	1	
7	24H1-004C2	Thread guide (complete)	1	1	
8	24H1-004C2a	Thread guide	1	1	
9	24H1-004C2c	Felt	1	1	
10	24H1-004C2b	Stopper	1	1	
11	22T1-021G3	Screw	2	2	
12	82T13-001A1a3	Nut	1	1	
13	24H1-004C3	Screw	1	1	SM11/64"(4.37) × 40
14	72T1-017	Screw	2	2	
15	72T1-016	Screw	1	1	
16	24H1-005	Oil guide plate	1	1	
17	24H1-006	Spacer	1	1	
18	24H1-007	Thread guide	1	1	
19	24H1-008	Screw	2	2	SM3/16"(4.76) × 28
20	22T1-010	Thread guide	1		
21	22T1-011	Screw	1		
22	24H1-009	Thread take-up cover	1	1	
23	72T1-016	Screw	1	1	
24	24H1-010	Thread guide (arm)	1	1	
25	82T1-006	Screw	2	2	
26	24H1-011	Side cover	1	1	
27	72T1-017	Screw	2	2	
28	24H1-012D	Arm side cover	1	1	
29	72T1-017	Screw	3	3	
30	20H12-000C	Bushing cap	1	1	

2

**Post bed Double
needle lock stitch**

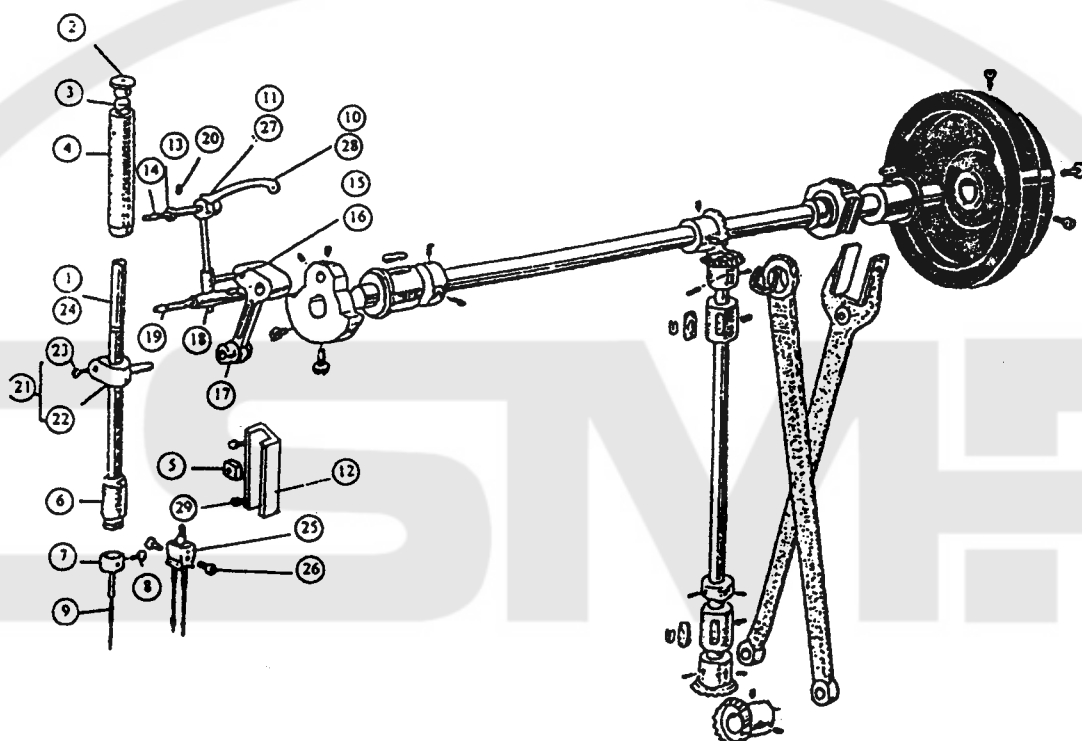


**Post bed Single
needle lock stitch**

2. UPPER THREAD TENSION REGULATOR MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H2-001A	Thread tension regulator (complete)	1		
2	72T1-007F1	Thumb nut (complete)	1	2	
3	22T1-012F10	Stop plate	1		
4	74T1-004D	Thread tension spring	1		
5	72T1-007F2	Thread tension releasing disc	1		
6	24H2-001A2	Stop plate	1		
7	24H2-001A3	Tension regulator bracket	1		
8	72T1-007F5	Tension disc	2		
9	24H2-001A4	Thread tension stud	1		SM1/4"(6.35) × 40
10	24H2-001A5	Thread take-up spring	1		
11	24H2-001A6	Thread tension releasing pin	1		
12	72T1-007F3	Regulator bushing	1		
13	22T1-012F8	Screw	1		
14	72T1-008	Screw	1		
15	25H2-001A	Thread tension regulator (complete)		1	
16	25H2-001A1	Mounting plate (complete)		1	
17	25H2-001A2	Thread tension stud		1	SM1/4" × 40
18	25H2-001A3	Thread take-up spring		1	
19	25H2-001A4	Thread controller disc		2	
20	25H2-001A5	Screw		1	SM3/32" (3.38) × 56
21	25H2-001A8	Regulating thumb nut		1	SM1/4" (6.35) × 40
22	25H2-001A6	Tension disc		4	
23	25H2-001A7	Thread regulator presser disc		2	
24	74T1-004D	Thread tension spring		2	
25	25H2-001A9	Tension releasing plate		1	
26	25H2-001A10	Screw		2	SM9/64" (3.57) × 40
27	25H2-001A11	Releasing spring		1	
28	25H2-001A12a	Thread releasing pin		1	
29	25H2-001A12b	Thread releasing pin		1	
30	25H2-001A13a	Screw		2	
31	25H2-001A16	Tension spring		2	
32	25H2-001A14	Thread guide disc		2	
33	25H2-001A15	Guide bracket		2	
34	25H2-001A17	Nut		2	SM9/64" × 40
35	25H2-001A18	Screw		1	
36	82T1-008D1	Screw		1	
38	25H2-002	Pipe		1	
39	25H2-003	Pin		1	

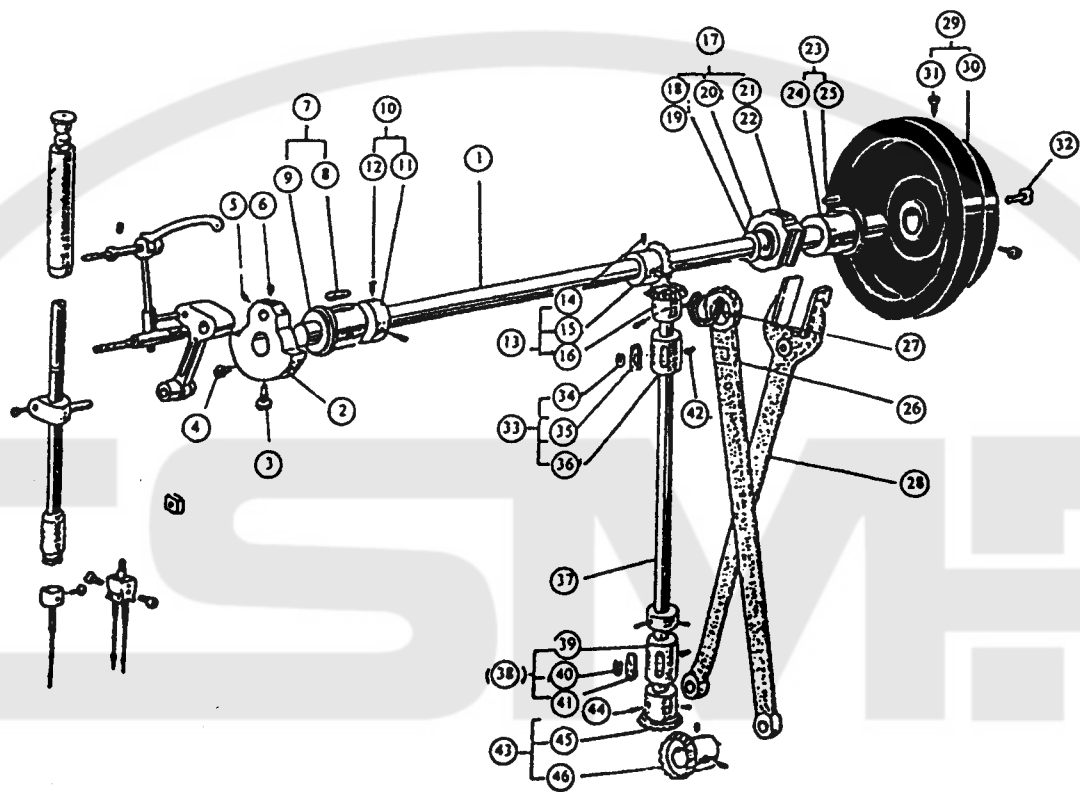
3



3. NEEDLE BAR AND TAKE-UP LEVER MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H3-001A1	Needle bar	1		
2	20H12-000C	Bushing cap	1	1	
3	22T2-010	Felt	1	1	
4	20H1-006C	Needle bar bushing (upper)	1	1	
5	22T2-020	Square block	1	1	
6	72T2-006	Needle bar bushing (under)	1	1	
7	73T2-003	Thread guide	1		
8	22T2-017	Screw	1		
9	24H3-001A3	Needle	1	2	DP × 5-16
10	24H3-002B1a	Take-up lever (complete)	1		
11	24H3-002B1a1	Lever and side block (complete)	1		
12	22T2-018	Needle bar connecting link guide	1	1	
13	24H3-002B1a2-1	Take-up lever support stud	1	1	
14	24H3-002B1a2-2	Oil wick	1	1	
15	24H3-002B1a3	Plug	1	1	
16	24H3-002B1a4	Oil wick	1	1	
17	24H3-002B1b	Needle bar link	1	1	
18	24H3-002B2	Crank pin	1	1	
19	24H3-002B3	Oil wick	1	1	
20	24H3-002B4	Screw	1	1	
21	24H3-002B5	Needle bar connecting stud (complete)	1	1	
22	22T2-001A8	Needle bar connecting stud (complete)	1	1	
23	22H2-001A1	Screw	1	1	
24	25H3-001A1	Needle bar		1	
25	25H3-001A2a	Needle clamp		1	
25	25H3-001A2b	Needle clamp		1	
25	25H3-001A2c	Needle clamp		1	
26	25H3-001A3	Screw		2	SM1/8" (3.18) × 44
27	25H3-002B1a1	Lever and side block (complete)		1	
28	25H3-002B1a	Take-up lever (complete)		1	
29	22T2-019	Screw	2	2	

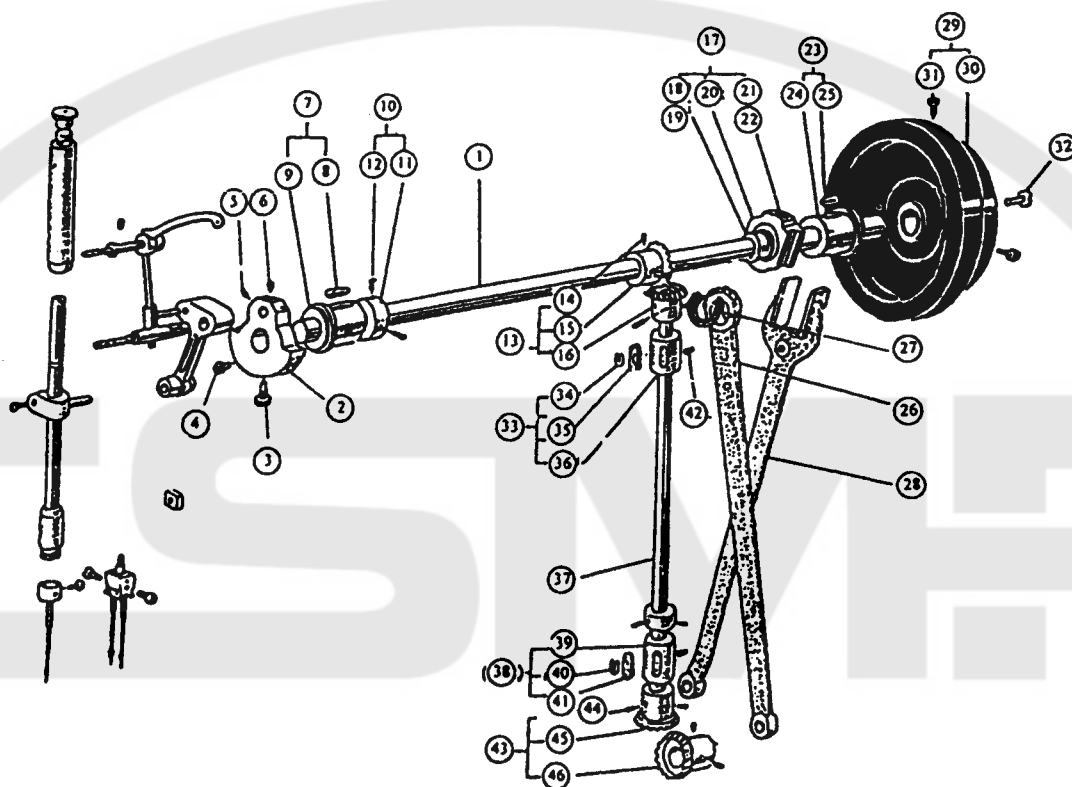
4



4. UPPER SHAFT AND VERTICAL SHAFT MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H4-001A1	Upper shaft	1	1	
2	24H4-001A2a	Crank	1	1	
3	22T3-002B2	Screw	1	1	
4	72T2-004B2	Screw	1	1	
5	22T2-007	Screw	1	1	
6	22T2-006	Screw	1	1	
7	24H4-001A3	Upper shaft bushing (left) (complete)	1	1	
8	20H1-006J2	Felt	1	1	
8	20H1-006J3	Felt	1	1	
9	24H4-001A3a	Upper shaft bushing (left)	1	1	
10	22T6-005B	Upper shaft collar (complete)	1	1	
11	22T6-005B1	Upper shaft collar (complete)	1	1	
12	22T3-002B2	Screw	2	2	
13	22T3-010E2a	Bevel gear (upper) (complete)	1	1	
14	22T2-005B3	Screw	4	4	
15	22T3-010E2a1-2	Bevel gear (upper shaft)	1	1	
16	22T3-010E2a2-2	Bevel gear (vertical shaft)	1	1	
17	24H4-001A4a	Feed cam (complete)	1	1	
18	24H4-001A4a1	Feed cam (complete)	1	1	
19	72T3-005D1a3	Screw	2	2	
20	72T3-005D1a2	Feed cam ring	1	1	
21	20H2-003A1a2	Felt	1	1	
22	20H2-003A1a1	Spring	1	1	
23	20H1-006I	Upper shaft bushing (right) (complete)	1	1	
24	20H1-006I2	Upper shaft bushing (right)	1	1	
25	20H1-006I1	Felt	1	1	
26	24H4-001A4b1	Crank rod	1	1	
27	22T3-009D1b	C-type stopper	1	1	
28	24H4-001A5	Feed forked connection	1	1	
29	24H4-001A6	Pulley (complete)	1	1	

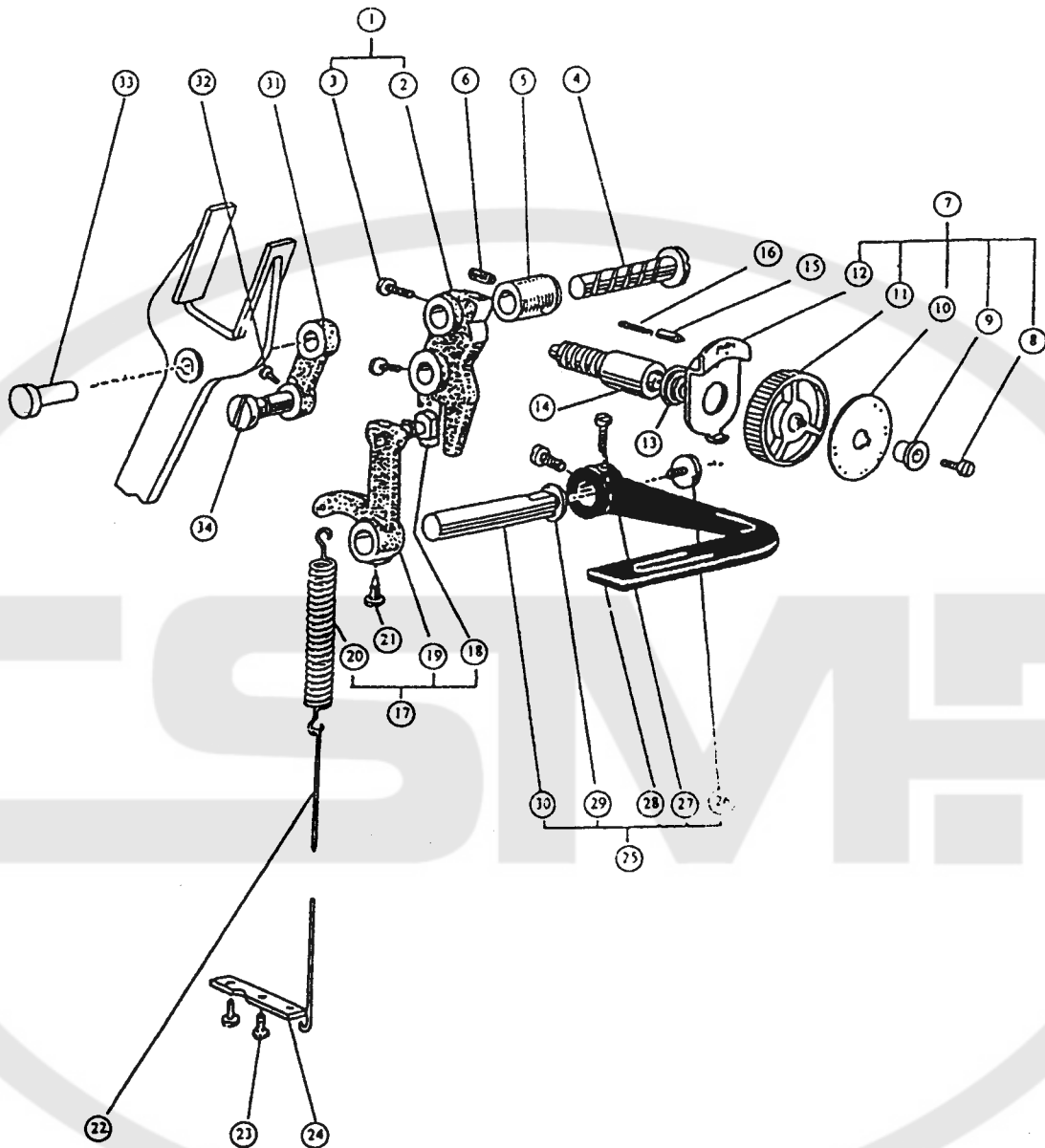
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4. UPPER SHAFT AND VERTICAL SHAFT MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
30	24H4-001A6a	Pulley	1	1	
31	22T3-007C2	Screw	2	2	
32	22T3-008	Screw	1	1	
33	20H1-006G	Vertical shaft bushing upper (complete)	1	1	
34	20H1-006G2	Felt	1	1	
35	20H1-006G1	Felt	1	1	
36	20H1-006G3	Vertical shaft bushing upper	1	1	
37	24H4-002B1a	Vertical shaft bushing	1	1	
38	20H1-006H	Vertical shaft bushing under (complete)	1	1	
39	20H1-006H1	Vertical shaft bushing under	1	1	
40	20H1-006G2	Felt	1	1	
41	20H1-006G1	Felt	1	1	
42	22T2-002	Screw	2	2	
43	22T3-010E2b	Bevel gear (under) (complete)	1	1	
44	22T2-005B3	Screw	4	4	
45	22T3-010E2b2-	Bevel gear (vertical shaft)	1	1	
46	22T3-010E2b1-	Bevel gear (lower shaft)	1	1	

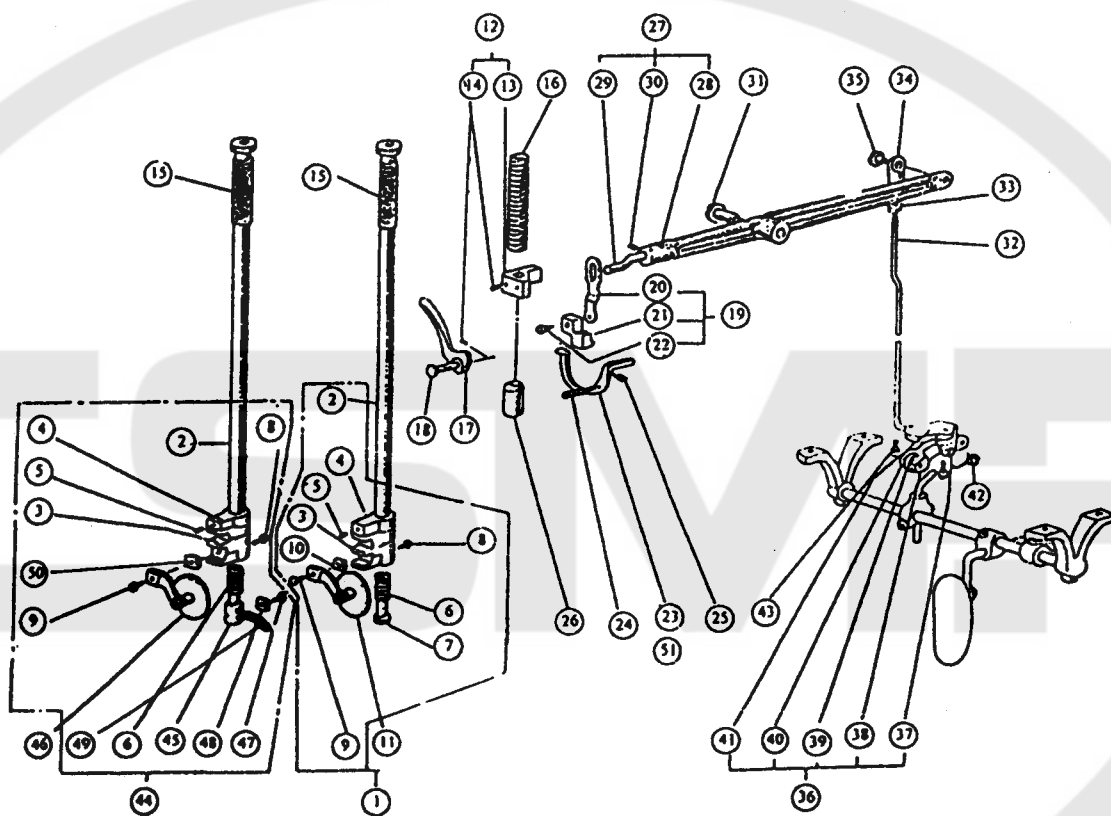
5



5. STITCH REGULATOR MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H5-001A	Feed regulator (complete)	1	1	
2	24H5-001A1	Feed regulator	1	1	
3	22T5-001A4	Screw	2	2	
4	22T5-004	Shaft	1	1	
5	24H5-002	Bushing	1	1	
6	22T2-002	Screw	1	1	
7	82T5-017D	Feed screw (complete)	1	1	
8	82T5-017D6	Screw	1	1	
9	82T5-017D5	Bushing	1	1	
10	82T5-017D4	Stitch length indicating plate	1	1	
11	82T5-017D2a1	Dial	1	1	
12	82T5-017D3	Stopper pin release lever	1	1	
13	82T5-017D7	Coil spring	1	1	
14	82T5-017D1	Screw bar	1	1	
15	82T5-003	Pin	1	1	
16	22T5-009	Spring	1	1	
17	20H5-001C	Feed regulating arm (complete)	1	1	
18	22T5-012E1a	Square block (complete)	1	1	
19	22T5-012E1	Feed regulating arm	1	1	
20	20H5-001C1	Spring	1	1	
21	22T5-013	Screw	1	1	
22	24H5-004	Knee lifter rod	1	1	
23	22T2-019	Screw	2	2	
24	24H5-005	Bracket	1	1	
25	20H5-002	Reverse lever (complete)	1	1	
26	22T5-010D3	Screw	1	1	
27	22T5-001A4	Screw	2	2	
28	72T5-006C1	Reverse lever	1	1	
29	22T5-011	Spring washer	1	1	
30	20H5-002A	Shaft	1	1	
31	22T5-001A2	Feed connecting link	1	1	
32	22T5-001A4	Screw	1	1	
33	22T5-001A1	Shaft	1	1	
34	22T5-001A3	Shaft	1	1	

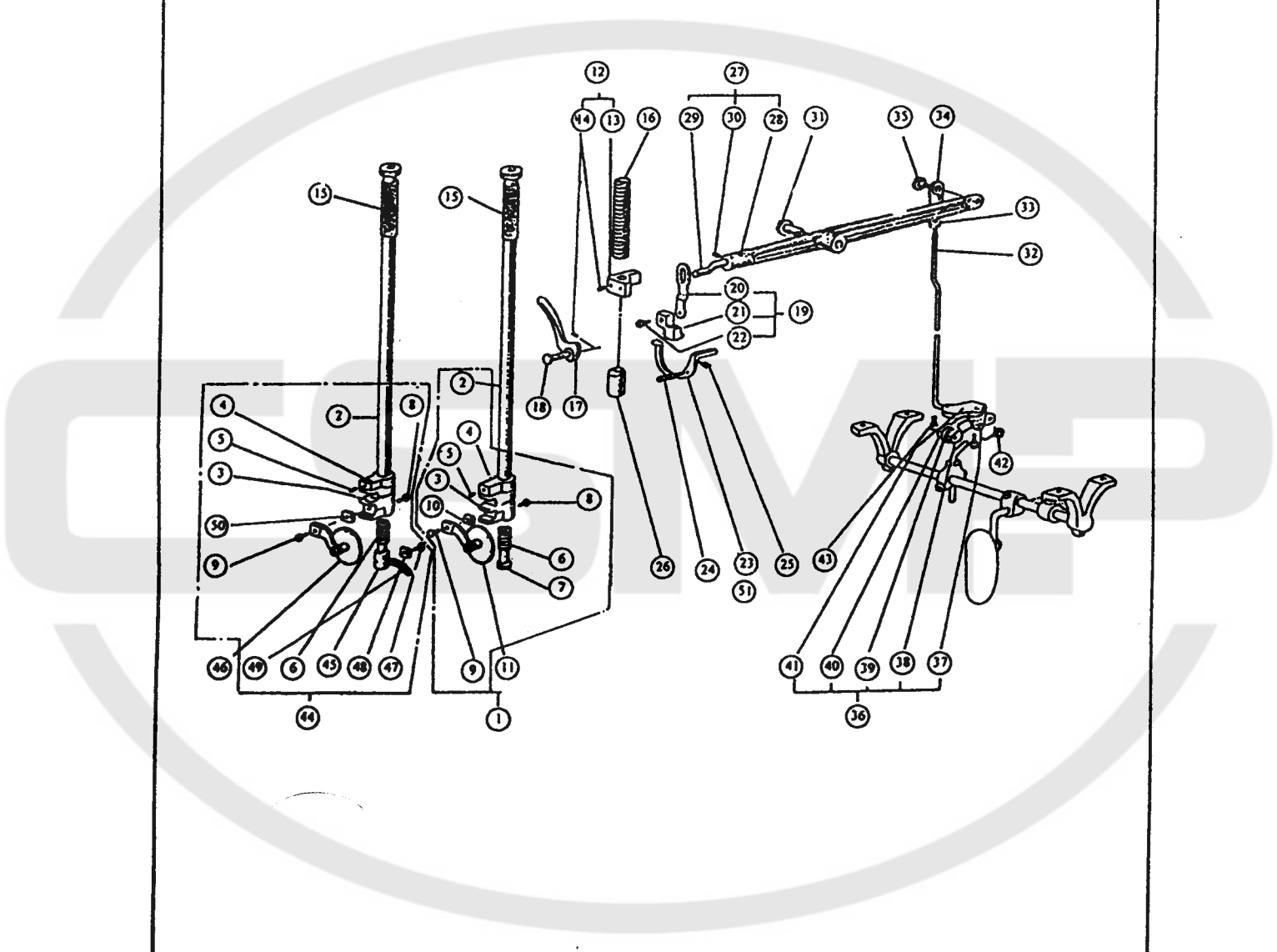
6



6. PRESSER FOOT AND KNEE LIFTER MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H6-001A	Roller presser bar (complete)	1		
2	24H6-001A1	Presser bar	1	1	
3	24H6-001A2	Bracket	1	1	
4	24H6-001A3	Stopper	1	1	
5	24H6-001A4	Screw	1	1	SM15/64" x 28 x 8
6	24H6-001A5	Spring	1		
7	24H6-001A6	Spring stud	1		
8	24H6-001A7	Screw	2	2	SM9/64" x 40 x 3.5
9	24H6-001A8	Screw	1	1	SM11/64" x 32
10	24H6-001A9	Spacer	1		
11	24H6-002B	Roller presser (complete)	1	1	
12	24H6-003C	Presser bar holder (complete)	1	1	
13	24H6-003C1	Presser bar holder	1	1	
14	72T3-005D1a3	Screw	2-	2	
15	24H6-004	Presser releasing thumb screw	1	1	SM1/2" x 28 x 33
16	24H6-005	Presser spring	1	1	
17	20H8-006	Presser bar lifter	1	1	
18	20H8-007	Presser bar lifter pin	1	1	
19	24H6-006D	Knee lifter lever link (complete)	1	1	
20	24H6-006D2	Knee lifter lever link	1	1	
21	24H6-006D1	Knee lifter lever	1	1	
22	24H6-006D3	Screw	1	1	SM3/16" x 32
23	24H6-007	Tension releasing lever	1		
24	24H6-008	Screw	1	1	SM11/64" x 40 x 23.5
25	24H6-009	Coil spring	1	1	
26	72T7-009	Presser bar bushing	1	1	
27	24H6-010E	Knee lifter lever (complete)	1	1	
28	24H6-010E1	Knee lifter lever	1	1	
29	24H6-010E2	Pin	1	1	

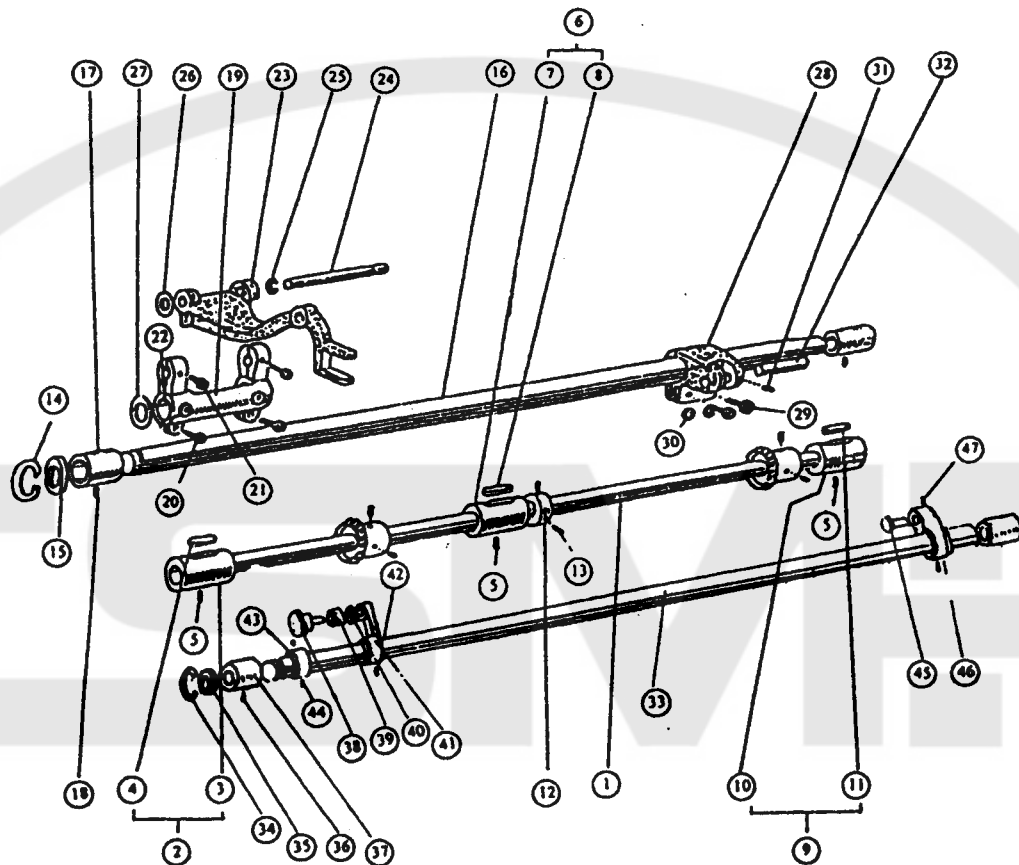
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6. PRESSER FOOT AND KNEE LIFTER MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
30	72T3-005D1a3	Screw	1	1	
31	20H8-013	Screw	1	1	
32	24H6-011F1	Knee lifter lever connection rod	1	1	
33	20H8-016	Nut	1	1	
34	20H8-015	Knee lifter lever joint	1	1	
35	20H8-014	Screw	1	1	
36	24H6-012G	Presser bar lever	1	1	
37	GB119-86	(complete)	1	1	
38	GB879-86	Spring pin	1	1	
39	24H6-012Q2	Roller	1	1	
40	24H6-012G1	Knee lifter lever (lower)	1	1	
41	20H8-018A	Bracket	1	1	
42	24H6-013	Spring	1	1	
43	20H8-020	Screw	2	2	
44	25H6-001A1	Roller presser bar (complete)		1	
45	25H6-001A1a	Spring stud		1	
46	25H6-001A1b	Roller presser (complete)		1	
47	25H6-001A1c	Screw		1	
48	25H6-001A1d	Spacer		1	
49	25H6-001A2a	Presser foot		1	
49	25H6-001A2b	Presser foot		1	
49	25H6-001A2c	Presser foot		1	
50	25H6-001A4a	Spacer		1	
51	25H6-0Q2	Tension releasing lever		1	

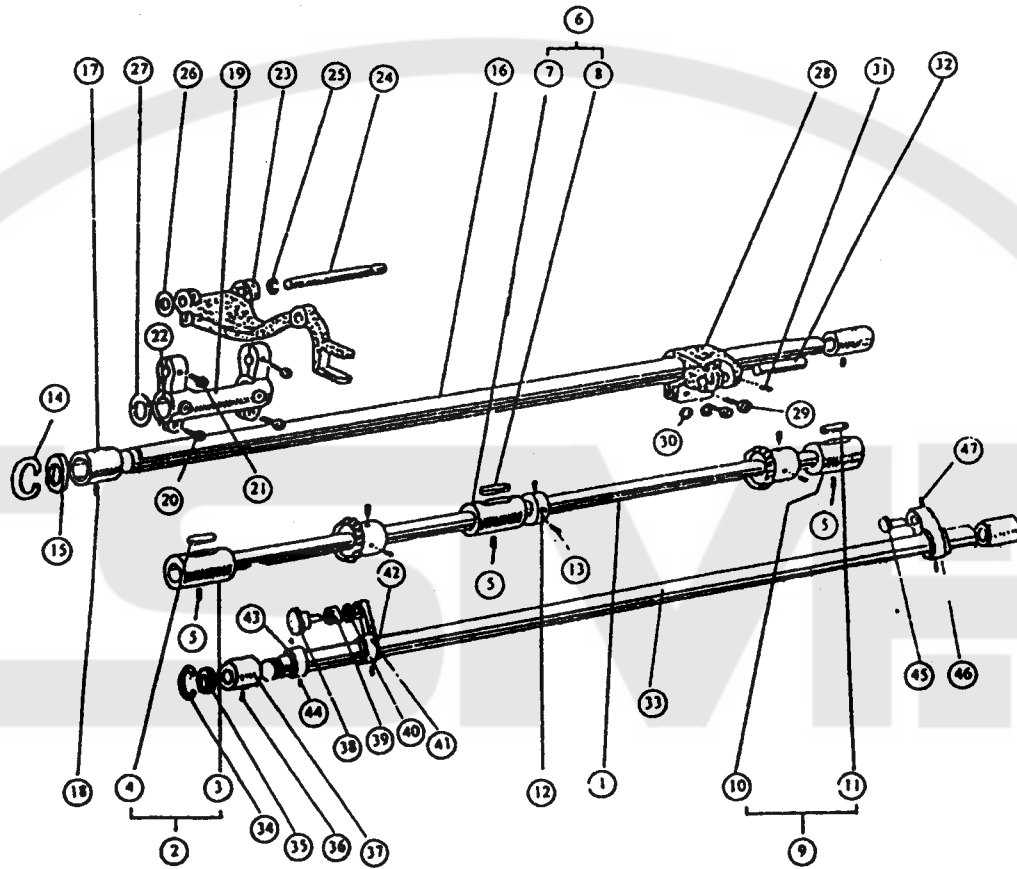
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7. LOWER SHAFT AND FEED ROCK SHAFT MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H7-001A1	Lower shaft	1	1	
2	20H1-006H	lower shaft bushing left (complete)	1	1	
3	20H1-006H1	Lower shaft bushing left	1	1	
4	20H1-006G1	Felt	1	1	
4	20H1-006G2	Oil wick	1	1	
5	72T3-005D1a3	Screw	3	3	
6	20H1-006K	Lower shaft bushing middle (complete)	1	1	
7	20H1-006K1	Lower shaft bushing middle	1	1	
8	20H1-006G1	Felt	1	1	
9	20H1-006K	Lower shaft bushing right (complete)	1	1	
10	20H1-006K1	Lower shaft bushing right	1	1	
11	20H1-006G1	Felt	1	1	
12	72T4-002B1	coller	1	1	
13	72T4-002B2	Screw	2	2	
14	GB894-86	C-type stopper 15	1	1	
15	22T6-013	Washer	1	1	
16	24H7-002B1a	Feed rock shaft	1	1	
17	20H1-006E	Feed rock shaft bushing (left)	2	2	
18	22T2-002	Screw	2	2	
19	24H7-002B4a1	Feed rock shaft crank	1	1	
20	22T6-008D3	Screw	2	2	
21	22T2-019	Screw	2	2	
22	GB879-86	Spring pin	1	1	
23	24H7-002B4b2	Feed bar	1	1	
24	24H7-002B4c	Feed bar shaft	1	1	
25	GB896-86	E-type stopper 5	1	1	
26	24H7-002B4d	Washer	1	1	
27	24H7-002B5	Slide washer	1	1	
28	24H7-002B2a1	feed rock shaft (right)	1	1	
29	22T6-008D3	Screw	2	2	

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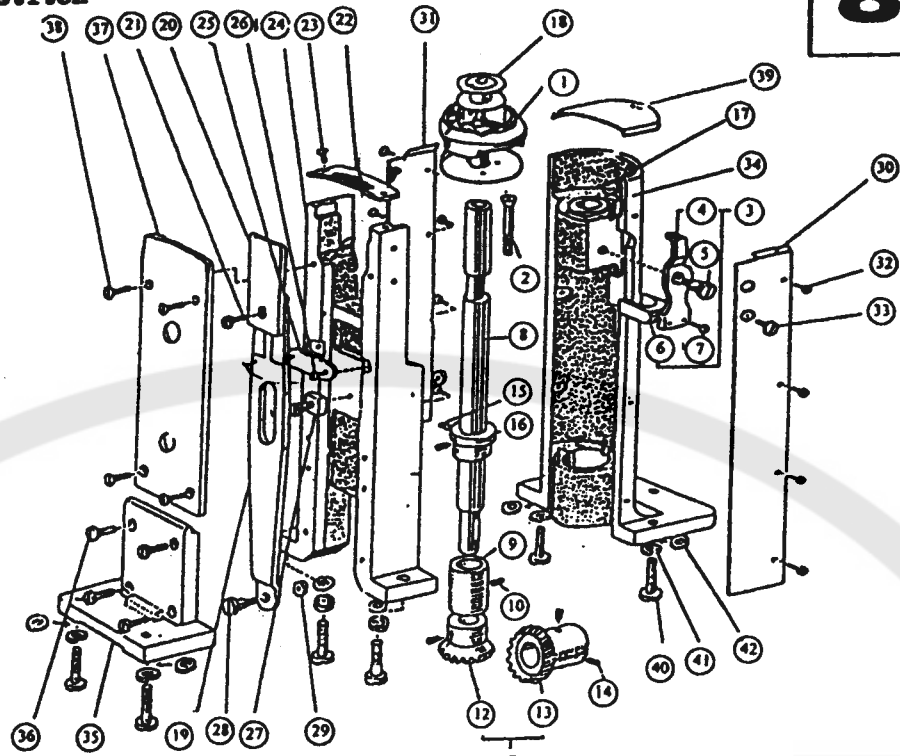


7. LOWER SHAFT AND FEED ROCK SHAFT MECHANISM

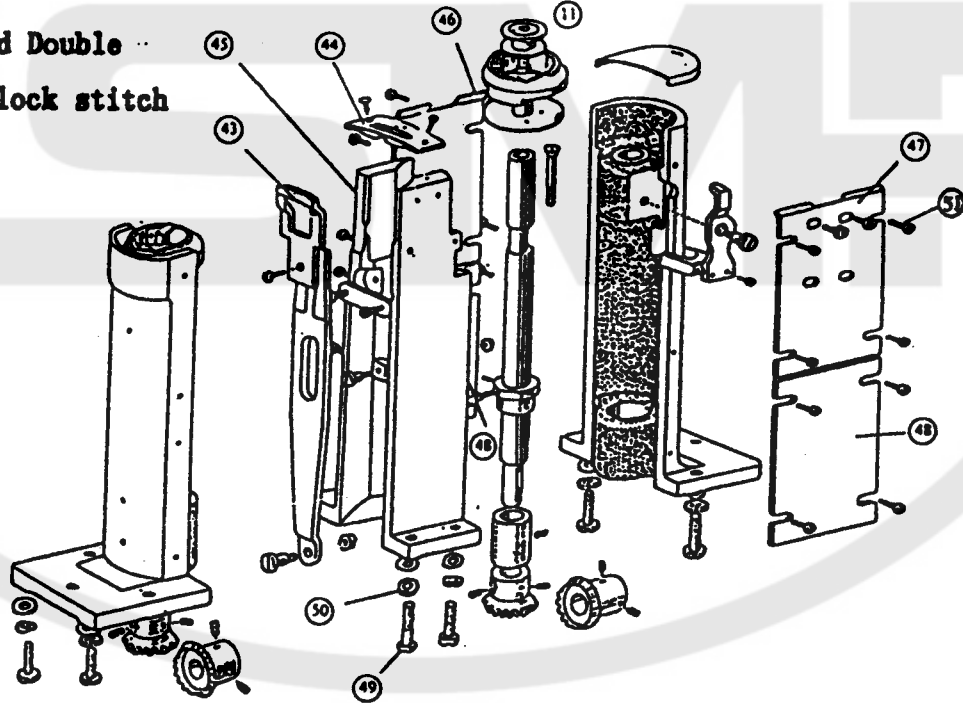
No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
30	24H7-002B2a2	Washer	2	2	
31	22T1-011	Screw	1	1	
32	24H7-002B3	Pin	1	1	
33	24H7-002B6	Feed lifting rock shaft	1	1	
34	GB894-86	C-type stopper	1	1	
35	22T6-013	Washer	2	2	
36	22T2-002	Screw	2	2	
37	20H1-006E	Feed lifting rock shaft bushing	1	1	
38	72T6-002B1b	Shaft	1	1	
39	72T6-007D1a	Square block	1	1	
40	72T6-007D1b	Washer	1	1	
41	72T6-002B1a	Feed lifting crank left	1	1	
42	82T2-003C1a6	Screw	1	1	
43	22T6-005B1	Collar	2	2	
44	22T3-002B2	Screw	1	1	
45	22T6-007	Shaft	1	1	
46	24H7-002B7a	Feed lifting crank right	2	2	
47	22T6-001A1b	Screw			

**Post bed Single
needle lock stitch**

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**Post bed Double
needle lock stitch**

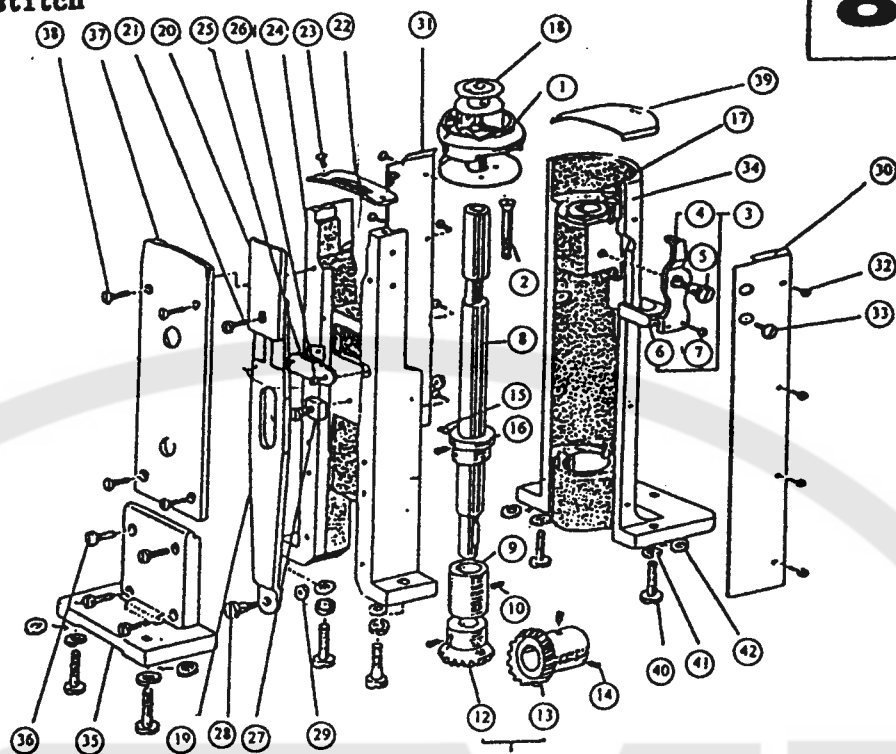


8. HOOK MECHANISM

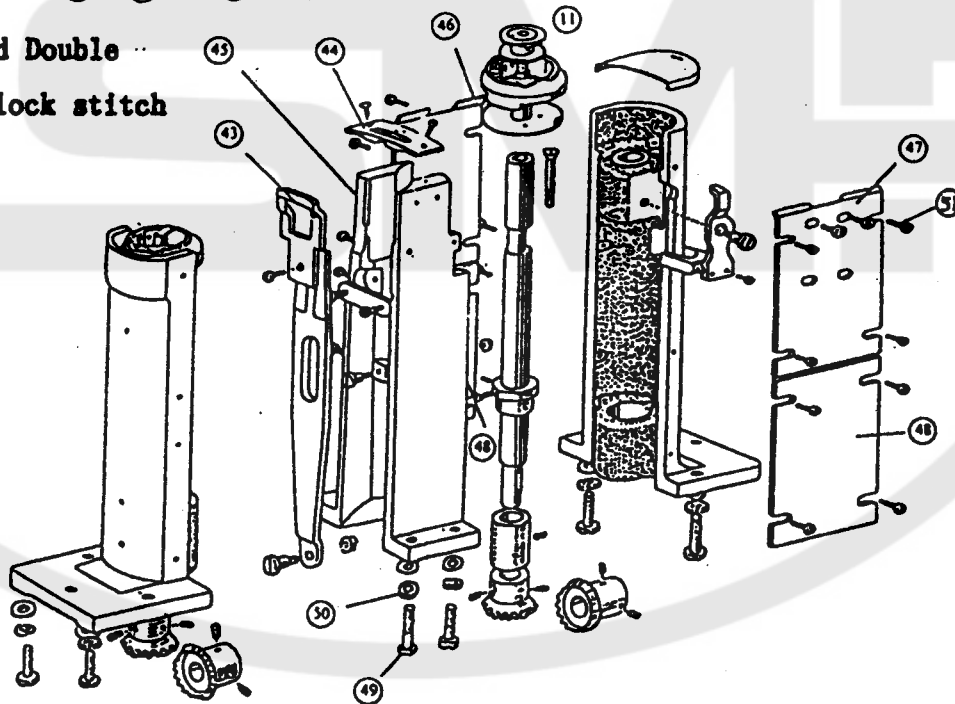
No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	24H8-001A1	Hook (complete)	1		
2	24H8-001A2	Screw	1	2	SM9/64"(3.57) × 40
3	24H8-001A3	Opener (complete)	1	2	
4	24H8-001A3a	Opener	1	2	
5	24H8-001A3b	Screw	1	2	SM9/32"(7.14) × 28
6	24H8-001A3c	Opener bracket	1	2	
7	24H8-001A3d	Screw	1	2	SM9/64" × 40 × 8.5
8	24H8-001A5	Hook shaft	1	2	
9	24H8-001A6	Hook shaft bushing	1	2	
10	22T1-011	Screw	1	2	
11	24H8-001A7	Bevel gear (complete)	1	2	
12	24H8-001A7a	Bevel gear (hook shaft)	1	2	
13	24H8-001A7b	Bevel gear (lower shaft)	1	2	
14	22T3-002B2	Screw	4	8	
15	22T3-002B2	Screw	2	4	
16	24H8-001A8a	Collar	1	2	
17	24H8-001A9	Felt	1	2	
18	24H8-002	Bobbin	1	2	
19	24H8-003B1	Feed plate	1	1	
20	24H8-003B2	Feed dog	1		
21	72T1-013	Screw	1	1	
22	24H8-003B3	Needle plate	1		
23	24H8-003B4	Screw	2	2	SM9/64"(3.57) × 40
24	24H8-003B5	Feed plate set bracket	1		
25	24H8-003B6	Supporter plate	1	1	
26	72T1-019	Screw	2	2	
27	24H8-003B7	Square block (complete)	1	1	
28	24H8-004	Screw	1	1	SM11/64" × 40
29	20H12-012	Nut	1	1	

**Post bed Single
needle lock stitch**

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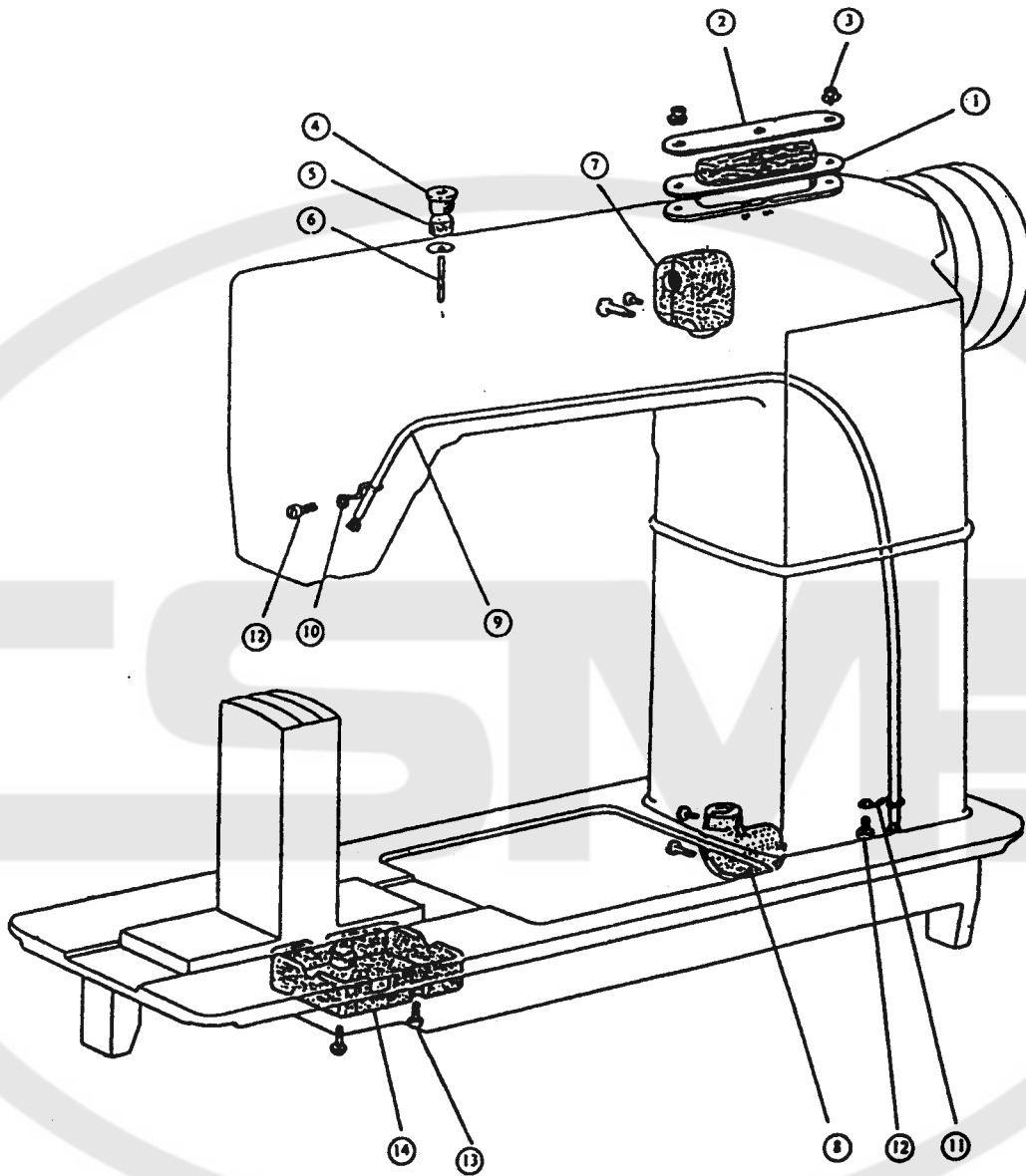
**Post bed Double
needle lock stitch**



8. HOOK MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
30	24H8-005	Cover plate	1		
31	24H8-006	Cover plate	1		
32	24H8-007	Screw	8		SM9/64" x 40 x 6
33	24H8-008	Screw	3	4	SM11/64" x 40 x 4
34	24H8-001A4	Hook shaft supporter	1	2	
35	24H8-009	Side cover bracket	1		
36	22T6-008D3	Screw	4		
37	24H8-010	Rear cover plate	1		
38	22T2-019	Screw	4		
39	24H8-011	Slide plate	1	2	
40	24H8-012	Screw	6	6	SM5/16" x 28 x 26
41	GB93-87	Spring washer	6	8	
42	GB848-85	Washer	6	6	
43	25H8-001A1a	Feed dog		1	
43	25H8-001A1b	Feed dog		1	
44	25H8-001A2a	Needle plate		1	
44	25H8-001A2b	Needle plate		1	
44	25H8-001A2c	Needle plate		1	
45	25H8-001A3	Feed plate set bracket		1	
46	25H8-003	Cover plate		1	
47	25H8-002	Cover plate		2	
48	25H8-004	Cover plate		2	SM1/4" x 24 x 16.5
49	25H8-005	Screw		2	
50	GB848-85	Washer		16	
51	82T2-003C1a6	Screw			

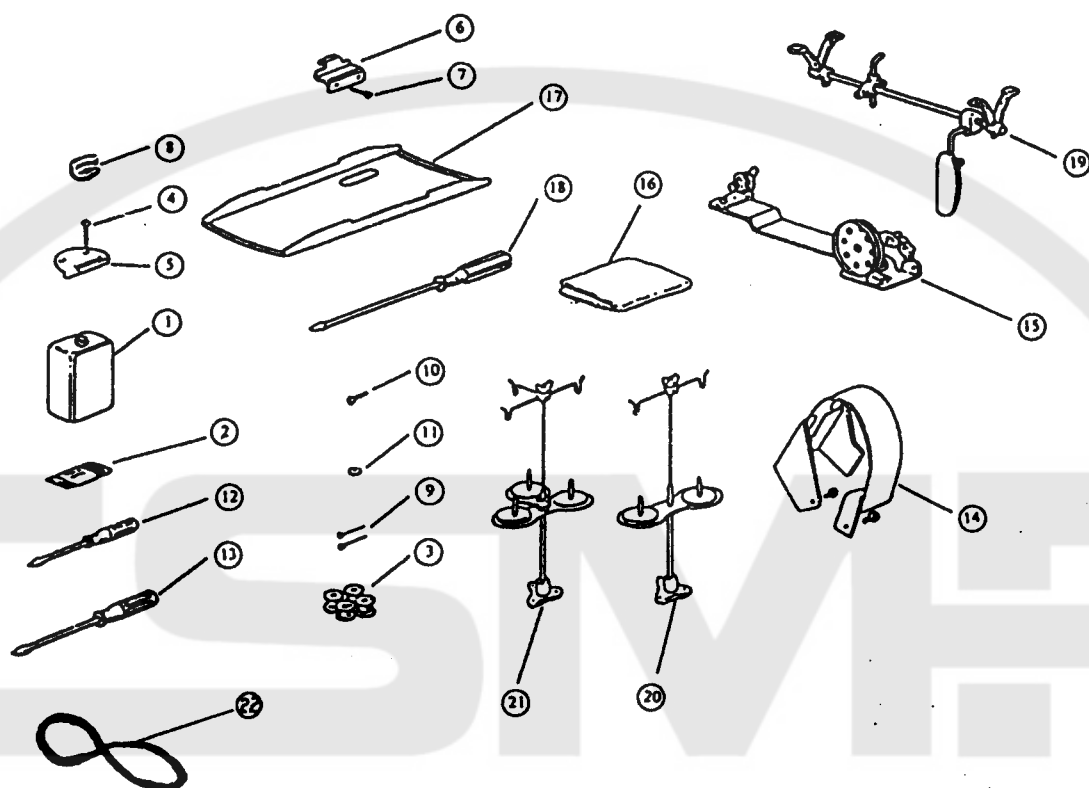
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9. OIL LUBRICATION MECHANISM

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	20H12-017	Oil box (complete)	1	1	
2	20H12-017A	Oil cover	1	1	
3	72T1-017	Screw	2	2	
4	24H9-001	Oil cap	1	1	
5	24H9-002	Felt	1	1	
6	24H9-003	Oil wick	1	1	
7	24H9-004A	Gear box upper (complete)	1	1	
8	24H9-005B	Gear box lower (complete)	1	1	
9	24H9-007C	Pipe (complete)	1	1	
10	24H9-009	Holder	1	1	
11	24H9-008	Holder	1	1	
12	22T2-019	Screw	2	2	
13	82T2-003C1a6	Screw	2	2	
14	24H9-006	Gear box	1	1	

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10. ACCESSORIES

No.	Ref. No.	Description	Needle Number		Remarks
			Single	Double	
1	20H14-001E	Oiler	1	1	DP × 5-16
2	24H3-001A3	Needle	4	6	
3	24H8-002	Bobbin	3	4	
4	GB100-76	Screw	4	4	6 × 25,
5	24H10-001A5	Hinge (2)	2	2	
6	24H10-001A4	Hinge (1)	2	2	
7	24H10-001A6	Screw	4	4	SM15/64" × 28 × 9
8	24H10-001A7	Vibration preventing rubbers	4	4	
9		Nail	10	10	
10	GB99-76	Screw	2	2	
11	72T9-023	Washer	2	2	
12	72T9-021	Screw driver (small)	1	1	
13	72T9-020	Screw driver (middle)	1	1	
14	24H10-002B	Belt cover (complete)	1	1	
15		Bobbin winder (complete)	1	1	
16	72T9-019	Vinyl cover	1	1	
17	24H10-005	Oil reservoir	1	1	
18	72T9-007	Screw driver (large)	1	1	
19	24H10-007	Knee lifter (complete)	1	1	
20		Cotton stand (complete)	1	1	
21		Cotton stand (complete)	1	1	
22	24H10-008	Belt	1	1	M55 (1397mm)