



MODEL

345-3

345-3P

PARTS BOOK

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FEATURES

- ★ Model **345** Double Chain Stitch Feed-off-the-arm Machine is most suitable for sewing tubes of medium and heavy materials, such as those of jackets, denim trousers, fatigue clothes and work trousers.
- ★ Machines made to the puller and denim specifications employ a presser foot, a needle plate, and feed dogs that have steps to prevent sewing irregularity and assure easy sewing of materials which may be different in thickness.
- ★ Machines made to the puller and the denim specifications employ a movable needle guard which makes them ideal for sewing heavy materials.
- ★ Machines made to the puller and the denim specifications have independent loopers for ease of adjustment.
- ★ Machines made to the puller specifications employ a proximity puller system which assures outstanding feeding performance for a wide range of materials from medium heavy to heavy.

SPECIFICATIONS

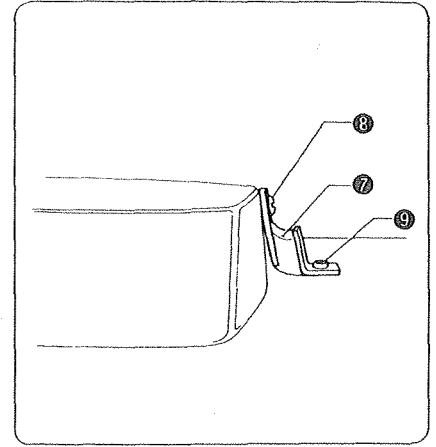
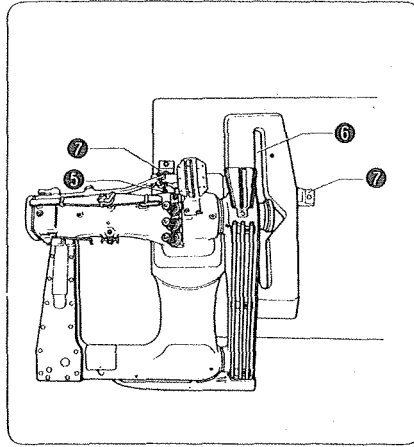
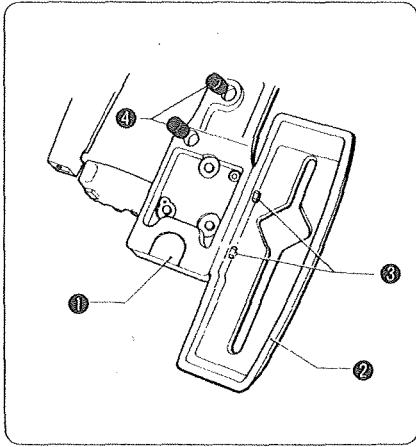
Model	345-3	345-2P/345-3P		345-2DP/345-3DP	
Stitch pattern	3-line parallel sewing	2-line parallel sewing	3-line parallel sewing	2-line parallel sewing	3-line parallel sewing
Sewing speed	3,600 spm				
Stitch length	1.4~4.2mm	2~4.2mm			
No. of Needle	3	2	3	2	3
Needle gauge	$\frac{7}{64}$ $\frac{7}{64}$ (5.6mm) · $\frac{1}{8}$ $\frac{1}{8}$ (6.4mm) $\frac{5}{32}$ $\frac{5}{32}$ (8.0mm) · $\frac{3}{16}$ $\frac{3}{16}$ (9.6mm)	$\frac{3}{16}$ (4.8mm) $\frac{1}{4}$ (6.4mm)	$\frac{1}{8}$ $\frac{1}{8}$ (6.4mm) $\frac{5}{32}$ $\frac{5}{32}$ (8.0mm) $\frac{3}{16}$ $\frac{3}{16}$ (9.6mm)	$\frac{1}{4}$ (6.4mm)	$\frac{1}{8}$ $\frac{1}{8}$ (6.4mm) $\frac{5}{32}$ $\frac{5}{32}$ (8.0mm)
Needle bar stroke	33.4mm	35mm			
Minimum tube size	190mm				
Puller device	None	Equipped	Equipped	Equipped	Equipped

TABLE OF STANDARD GAUGE

Specification		Needle gauge	Needle clamp	Needle Plate	Presser foot	Feed dog	Looper assembly	Lapper
Standard Specification	345-3	$\frac{7}{64}$ $\frac{7}{64}$	$\frac{7}{64}$ $\frac{7}{64}$	$\frac{7}{64}$ $\frac{7}{64}$	$\frac{7}{64}$ $\frac{7}{64}$	$\frac{7}{64}$ $\frac{7}{64}$	$\frac{7}{64}$ $\frac{7}{64}$	$\frac{7}{32}$ MH $\frac{7}{32}$ H
		$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{4}$ MH $\frac{1}{4}$ H
		$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{16}$ MH $\frac{5}{16}$ H
		$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$
Denim Specification	345/P	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{4}$ XL
		$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{32}$ $\frac{5}{32}$	$\frac{5}{16}$ XL
		$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{16}$ $\frac{3}{16}$	$\frac{3}{8}$ XL

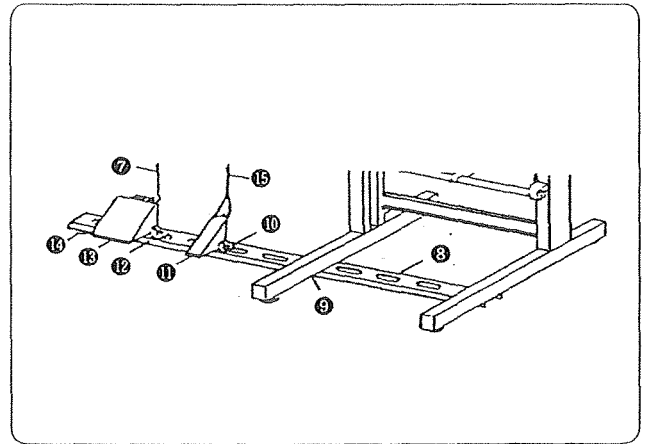
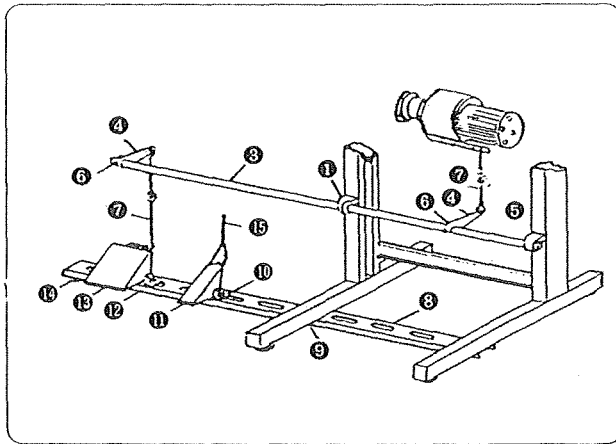
INSTALLING

1 Installing the Machine Head



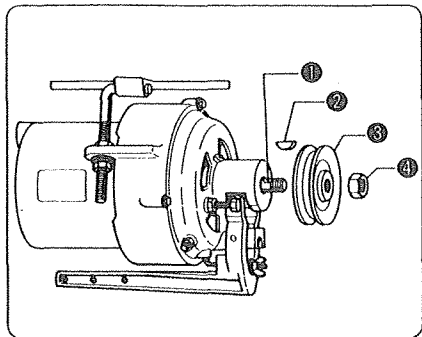
1. Install pulley cover base ② on machine bed ① with two hexagonal bolts ③.
2. Insert bar cushions ④ into the holes in the bottom of the bed.
3. Place the machine head on the table, adjust its position in forward and backward directions by aligning it with the hole for presser bar lifter chain ⑤, and in sidwise directions by aligning it with belt hole ⑥.
4. After fastening cushions ⑦ to the machine bed and pulley cover base with set screws ⑧, fix them to the table with screws ⑨.

2 Installing the Treadle and Chain



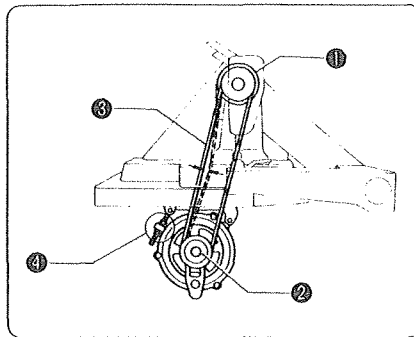
1. Fasten connecting lever bearing ① to the beam in the upper part of the table legs with nut ②.
2. Slide connecting lever L ④ onto connecting lever shaft ③, fit it to connecting lever bearing ①, and secure it with connecting lever shaft collar ⑤.
3. Set connecting lever L ④ in line with the clutch lever hole, and tighten it with square head bolts ⑥.
4. Hook connecting rod ⑦ to the clutch lever and connecting lever L ④.
5. Slide another connecting lever L ④ onto connecting lever shaft ③, and fix it with square head bolts ⑥.
6. Fasten treadle shaft ⑧ onto the lower beam across the table legs with hexagonal bolts ⑨.
7. Slide pedal stopper ⑩ and presser foot lifter pedal ⑪ onto treadle shaft ⑧, and fasten it with pedal stopper ⑩.
8. Slide treadle stopper ⑫ and treadle ⑬ onto treadle shaft ⑧, and fasten treadle stopper ⑫ in such a way that treadle ⑬ will move lightly.
9. Slide treadle support ⑭ onto the end of treadle shaft ⑧, turn it until treadle shaft ⑧ is parallel with the floor, and fasten it.
10. Hook one end of connecting rod ⑦ to connecting lever L ④, and hook the other end of it to treadle ⑬.
11. Hook one end of chain ⑮ to the presser foot lifter lever, pass the other end through the hole in presser foot lifter pedal ⑪, and adjust the chain length so that the pedal will be at the same height as treadle ⑬.

3 Installing the Motor Pulley



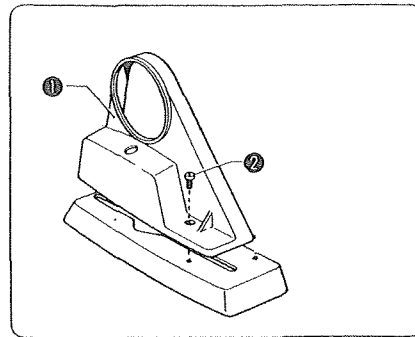
With motor shaft key way ① up, insert key ② into the key way, slide motor pulley ③ onto the motor shaft, and fasten it with nut ④.

4 Belt Tension Adjustment



Place belt ③ on machine pulley ① and motor pulley ②, and adjust the belt tension with tension regulator ④ so that the belt sags about 25 to 30 mm when it is pressed with the thumb at the center point between the pulleys.

5 Installing the Pulley Cover



Install pulley cover ① on the pulley cover base with two set screws ②.

6 Motor and Motor Pulley

1. Use the motor specified below

Three-phase 200 V	2-pole, 400 W motor
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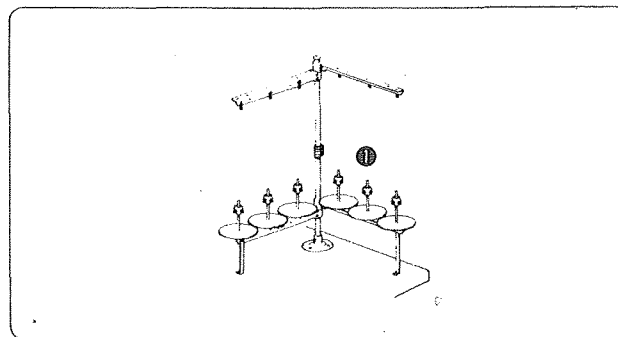
2. Motor Pulley

Use the correct motor pulley suitable to the frequency of your power supply as specified below.

Frequency	Sewing speed	Motor pulley	Belt size
50Hz	3,100	85	M-45
	3,600	95	M-46
60Hz	3,100	70	M-44
	3,600	80	M-45

7 Spool Stand

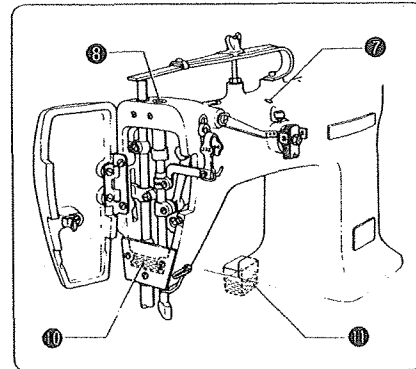
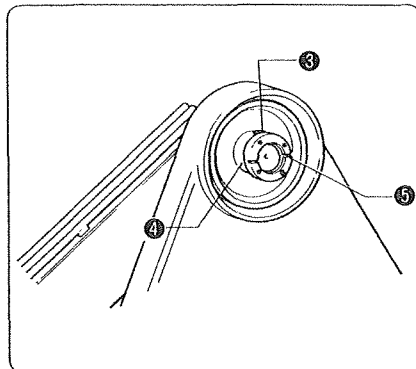
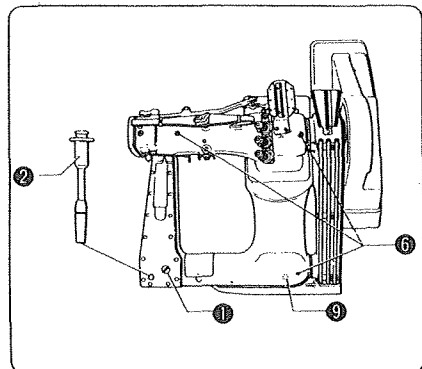
Assemble spool stand ① as shown below, and install it at the right frontal corner of the table with screws.



LUBRICATION AND RUNNING IN

1 Lubrication

Be sure to oil the following points before using your sewing machine.

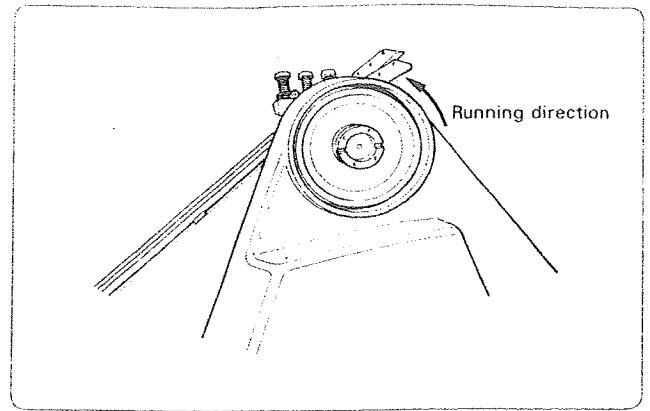


- After setting up the machine, remove adjusting cover screw ①, and pour oil in up to the reference line on oil gauge ②.
- Turn the pulley until oil cap ③ is up, remove oil cap ③ and pour oil into oil tank ④ until it is full. If the oil in the oil tank decreases below tank center line ⑤, the oil will not be drawn into the upper shaft, causing imperfect lubrication. Be sure to keep the oil in the oil tank above oil tank center line ⑤.
- Pour about 5 drops of oil weekly, into three oil cups ⑥, upper thread nipper tension bracket oil hole ⑦, and needle bar bushing oil hole ⑧.
- Remove oil drain screw ⑨ from time to time to discharge the used oil which has collected in the front bed oil sump.
- Wipe arm jaw ⑩ and rear bed oil sump ⑪ from time to time to remove oil from them.

※Use white spindle oil.

2 Running In

1. Motor switch on, depress the treadle, and make sure that the pulley runs in the arrow direction.
If the pulley runs in the opposite direction, remove the plug, and reconnect two of the three wires (but not the earth wire) of the 3-phase cord.
2. To run in your machine, operate it at about 3,100 spm for the first 3 or 4 days.



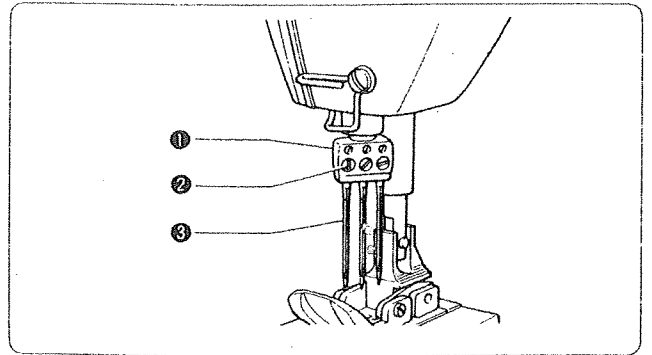
CORRECT OPERATION

1 Needles and Threads

The needle and threads to be used vary depending on sewing conditions. Select the correct ones by referring to the table below.

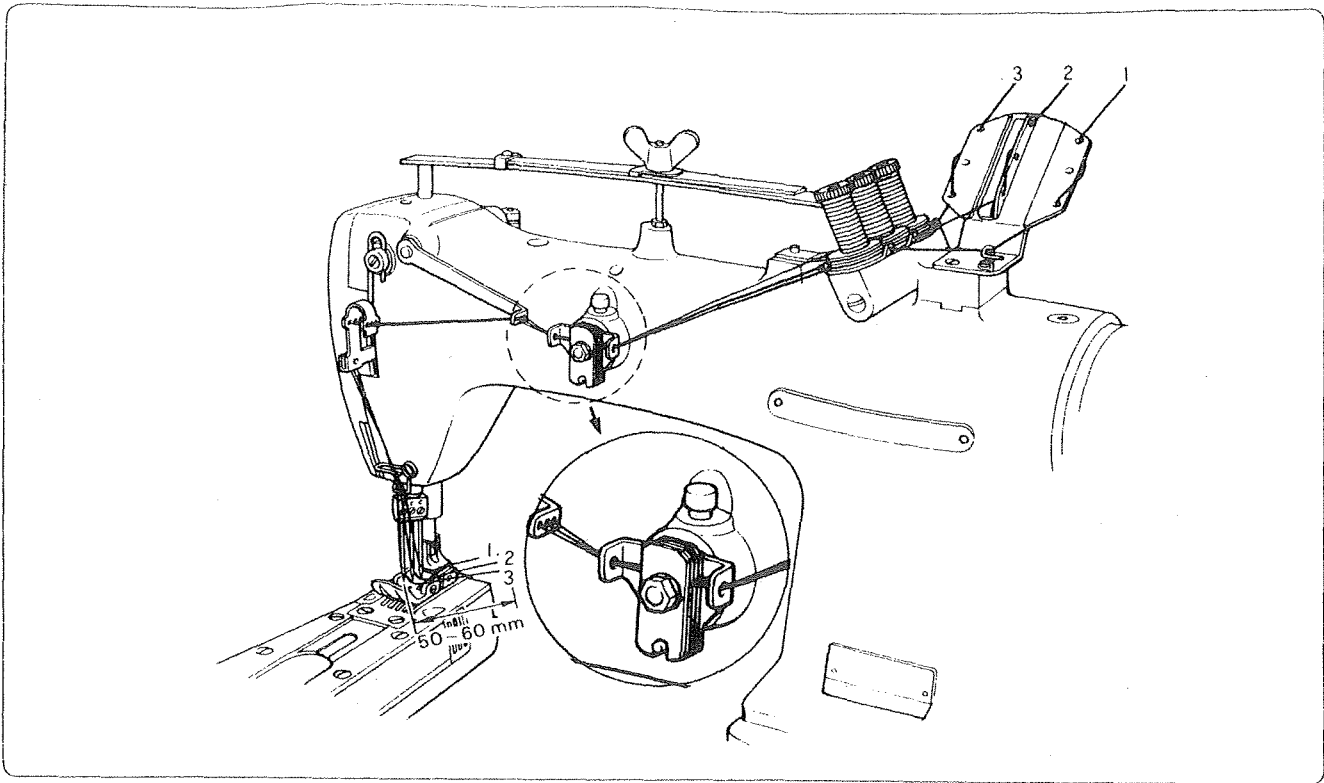
Needle	Thread	
	Upper thread	Lower thread
# 16	Cotton # 50	Cotton # 60
# 19	Cotton # 30	Cotton # 50
# 22	Cotton # 20	Cotton # 30

2 Installing the Needles

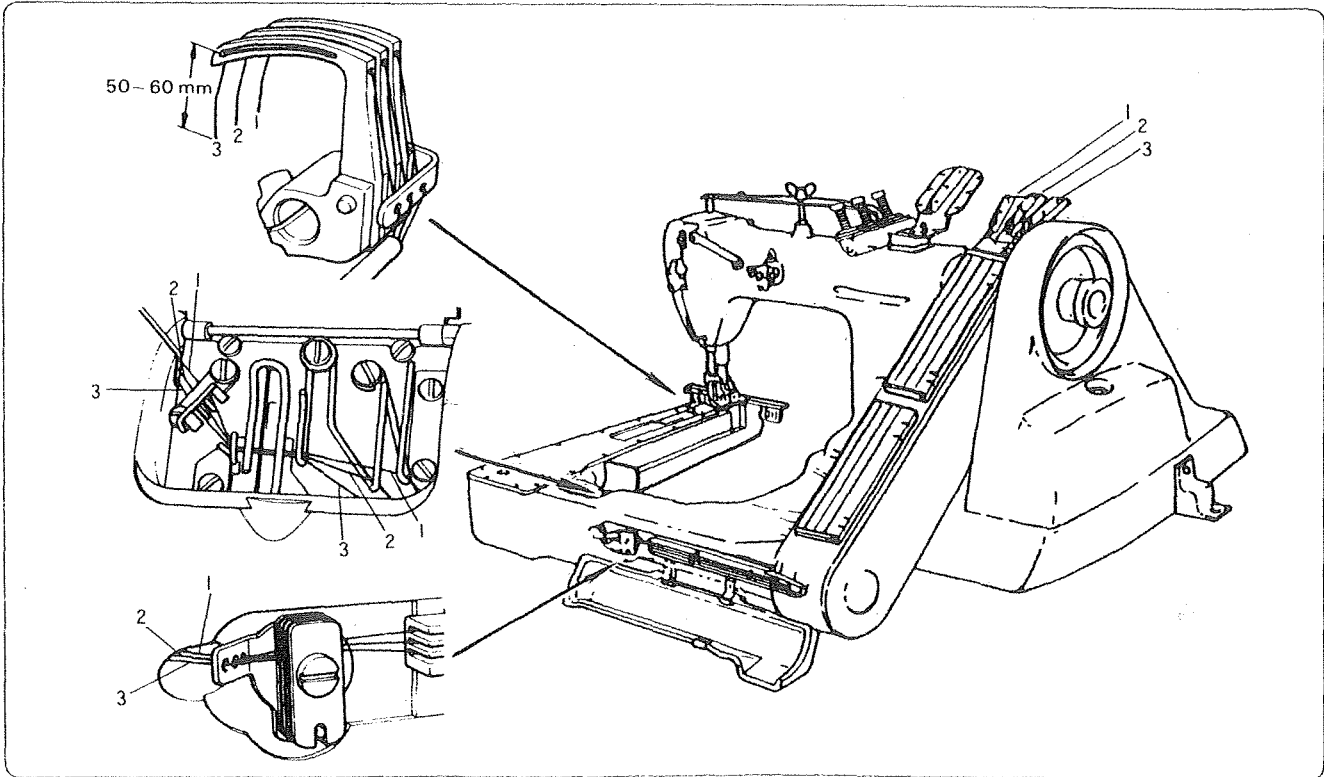


1. Turn the pulley until needle holder ① is raised to the highest position.
2. Loosen needle set screws ②, hold needles ③ with their long grooved side facing front, insert them into needle holder ① all the way, and fasten the needle with needle set screws ②.

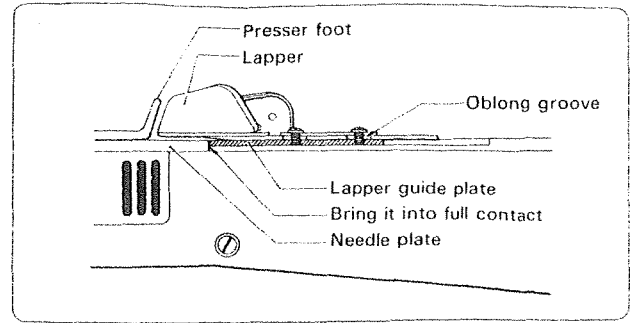
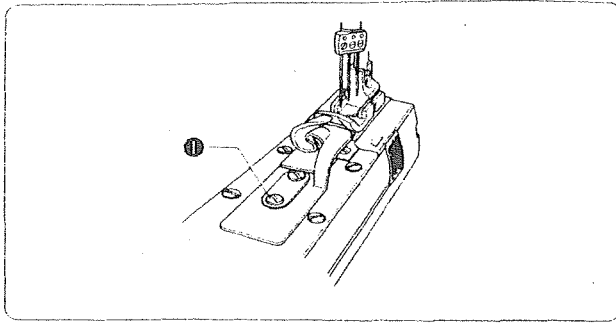
3 Upper Threading



4 Lower Threading



5 Installing the Lapper

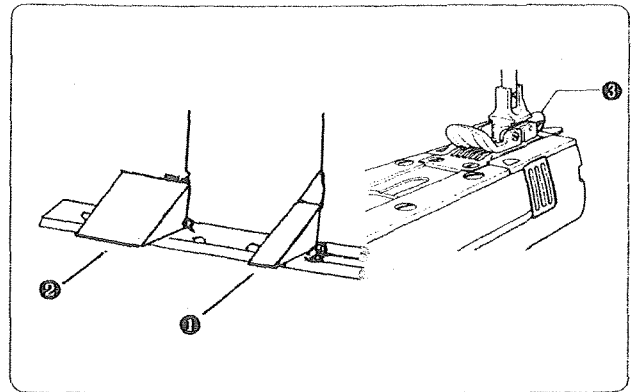


Insert the lapper guide plate into the oblong groove in the forward feed arm, and fit the lapper into place in such a way that its tip will not touch the presser foot.

*If the lapper is too hard to move, or fails to reach the correct position, loosen set screw ① slightly and adjust the lapper position.

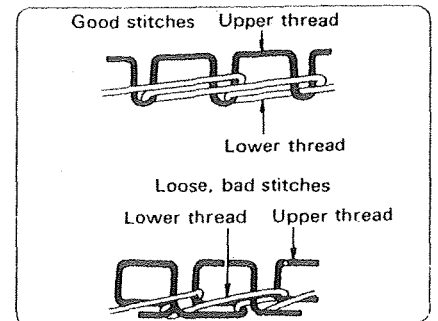
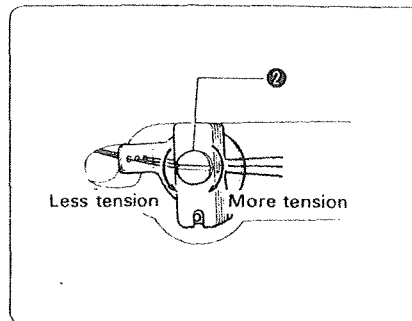
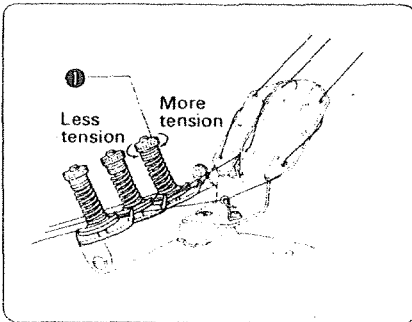
6 Sewing

1. Switch the power on, step down on presser foot lifter pedal ①, place a fabric under the presser foot, and release presser foot lifter pedal ①.
2. Depress treadle ② to start the machine.
3. After sewing the work, keep sewing until it reaches thread cutter ③, and then cut the threads with thread cutter ④.



7 Thread Tension

Thread tension differs with sewing conditions. Adjust it to suit your particular sewing conditions.

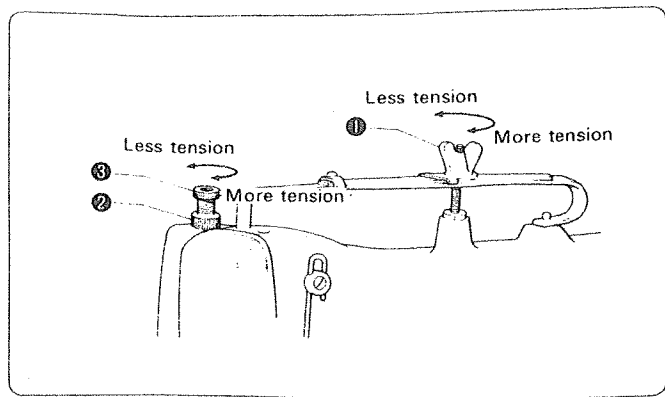


1. Adjust the upper thread tension properly by turning upper thread adjusting screw ①.
2. Adjust the lower thread tension properly by turning lower thread adjusting screw ②.

8 Presser Foot Pressure Adjustment

Adjust the presser foot pressure by turning wing nut ① to such a level that it is just enough to keep the work from slipping.

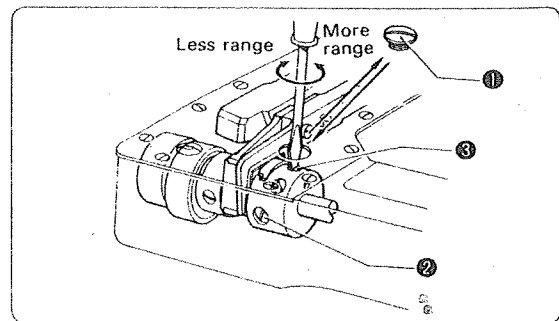
※ In case of Model _____, the puller pressure can be adjusted as appropriate to the work by loosening adjusting thumbscrew nut ② and turning presser adjusting screw ③.



9 Stitch Length Adjustment

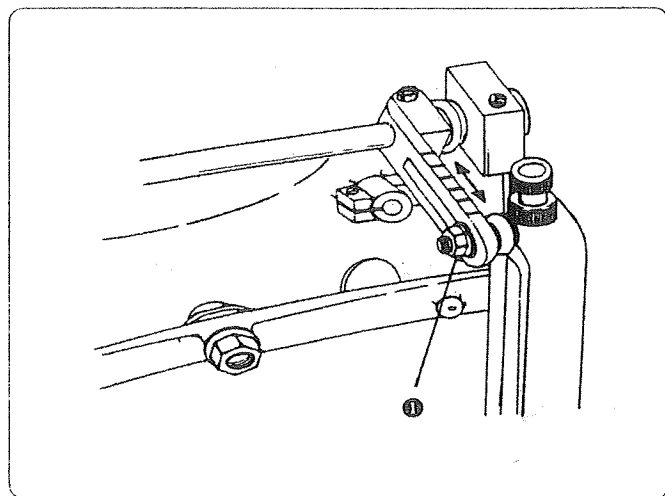
1. Remove adjusting cap screw ①.
2. Turn the pulley toward yourself until set screw ② comes to the position of the adjusting cap screw hole.
3. Loosen set screw ② with a screwdriver, turn the pulley again by about one-quarter of a turn in the same direction to bring horizontal eccentric adjusting screw ③ to the position of the adjusting cap screw hole.
4. Stitch length will decrease when horizontal eccentric adjusting screw ③ is turned clockwise with the screwdriver, and increase when it is turned counter-clockwise.
5. After the adjustment, tighten set screw ② securely.

※ In case of Model _____, readjust the needle guard after adjusting the stitch pitch. In case of Model -7A and -8A, readjust the needle guard and puller feed.

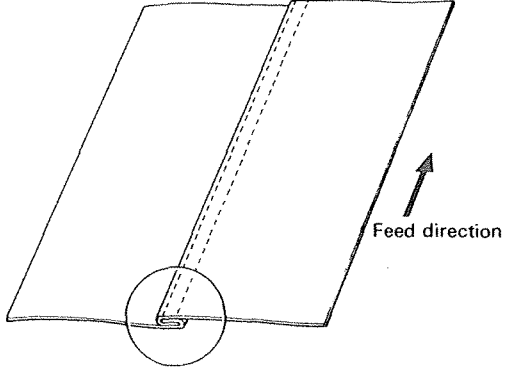
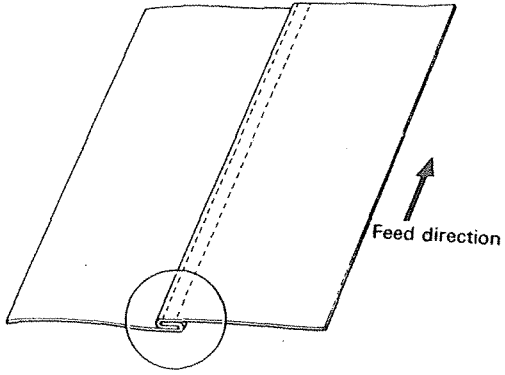
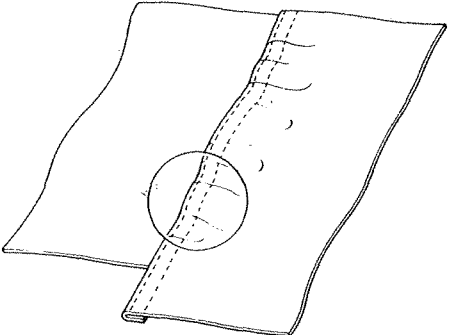
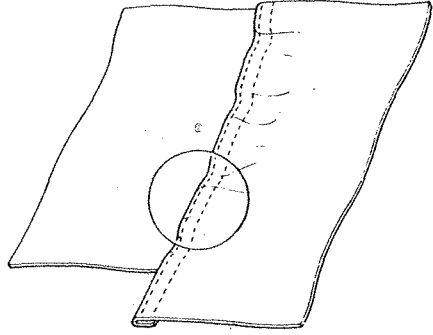
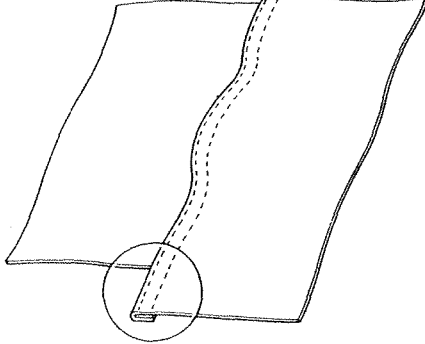
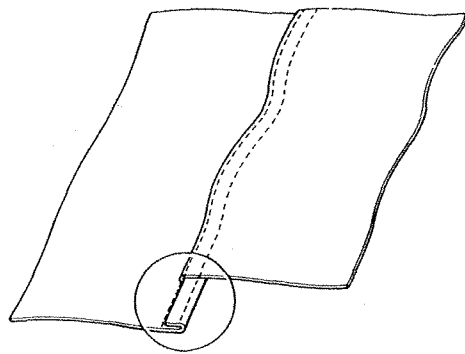


10 Puller Feed Adjustment

1. After adjusting the STITCH LENGTH, you have to readjust the PULLER FEED again.
2. Loosen the nut ①, you can get more feed toward outside, get less toward inside.
3. After adjusting, tighten the nut ①.

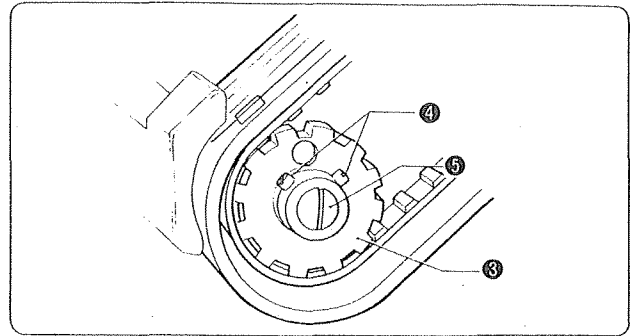
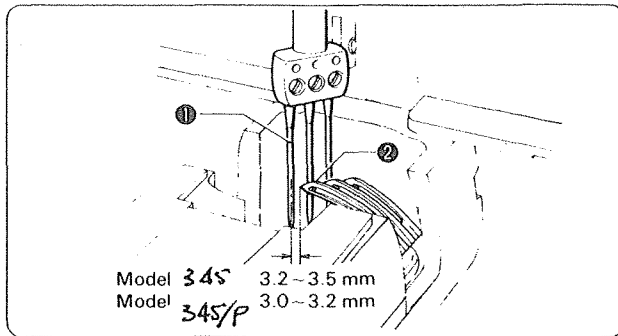


★The table below shows samples of stitches made with a highly elastic fabric and a fabric which is not so elastic.
Adjust the puller feed by referring to this table.

Puller feed	Fabric with high elasticity	Fabric with low elasticity
Correct	 <p data-bbox="486 694 949 714">Neither non-alignment nor sewing wrinkles.</p>	 <p data-bbox="1045 694 1508 714">Neither non-alignment nor sewing wrinkles.</p>
Insufficient	 <p data-bbox="574 1274 853 1295">Non-aligned, and wrinkled.</p>	 <p data-bbox="1125 1274 1412 1295">Non-aligned, and wrinkled.</p>
Excessive	 <p data-bbox="566 1854 869 1875">Non-aligned, and very wavy.</p>	 <p data-bbox="1117 1854 1428 1875">Non-aligned, and very wavy.</p>

STANDARD ADJUSTMENTS

1 Needle and Loper Timing Adjustment



Model 34S-3

Make an adjustment so that, when needles ① come down to the lowest position, loopers ② will be at the end of their backward travel and that the distance between the centers of the needles and the tips of the loopers will be somewhere from 3.2 to 3.5 mm.

Model 34S/P

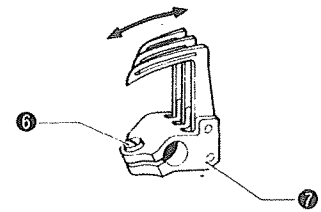
Make an adjustment so that, when needles ① come down to the lowest position, loopers ② will be at the end of their backward travel and that the distance between the centers of the needles and the tips of the loopers will be somewhere from 3.0 to 3.2 mm.

<Adjusting Method>

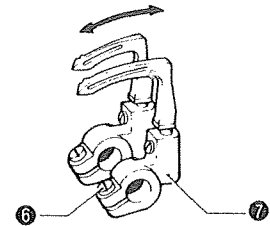
1. Remove the presser foot, needle plate and feed dogs.
2. Loosen two set screws ④ and cap screw ⑤ on lower belt wheel ③.
3. Turn the pulley toward yourself until needles ① come down to the lowest position.
4. Turn the lower-shaft until loopers ② reach the end of their backward travel.
5. Tighten cap screw ⑤ and two set screws ④ securely.
6. Loosen set screw ⑥, move looper holder ⑦ in the arrow direction until the distance between the needle center and the looper tip is 3.2 to 3.5 mm, and retighten set screw ⑥ securely.

※In case of machines made to the denim specifications, the individual loopers must be adjusted because they are independent of one another.

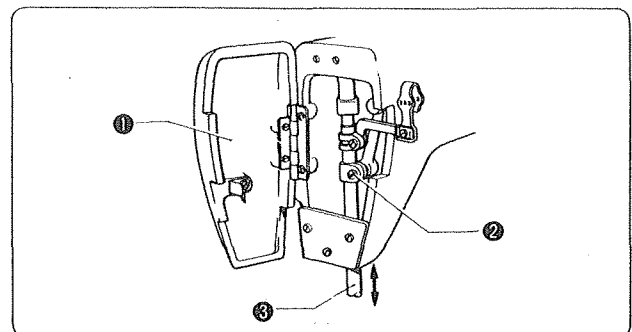
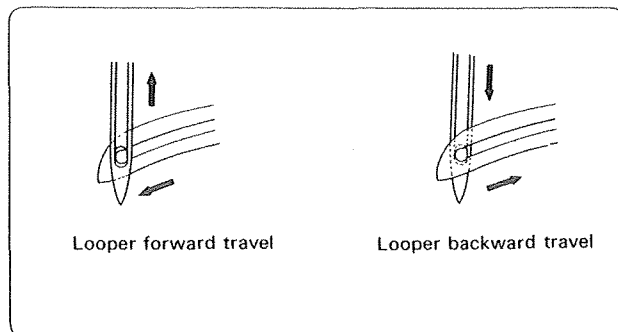
The looper of standard specification



The looper of denim specification



2 Needle Bar Height Adjustment

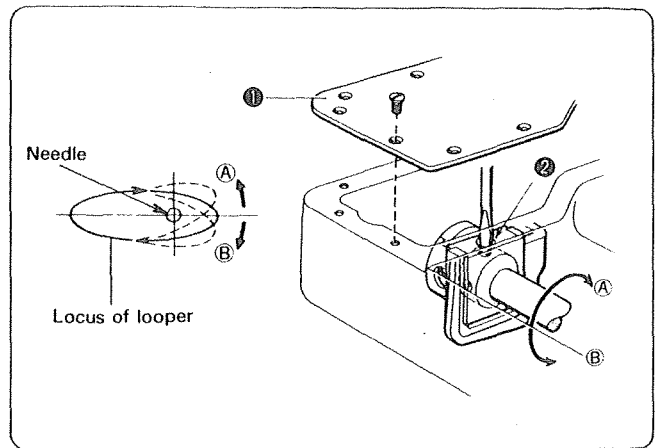
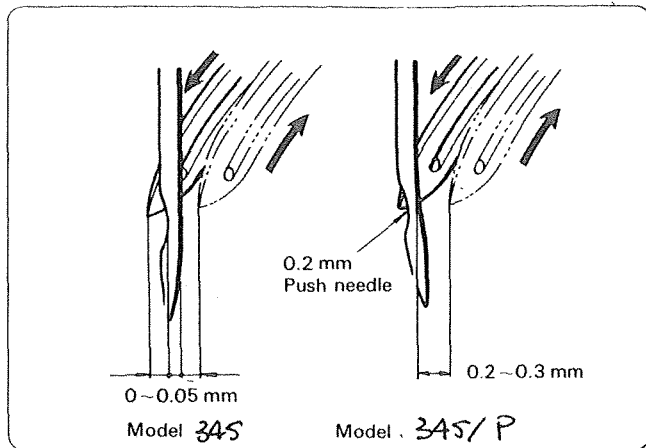


Adjust the needle bar height so that the looper thread eyes will match the needle eyes in the forward and backward travels of the loopers.

<Adjusting Method>

1. Turn the pulley toward yourself until the loopers move forward from the rightmost position to a point where the looper thread eyes are in line with the needles eyes.
2. Open face plate ①, loosen needle bar clamp screw ②, and move needle bar ③ up or down until the looper thread eyes are in line with the needle eyes.
3. Retighten needle bar clamp screw ② securely.
4. After the adjustment, turn the pulley toward yourself and make sure that the looper thread eyes match the needle eyes in the forward and backward travels of the loopers.

3. Looper Timing for Avoiding Contact with Needles



Model 345-3

Make an adjustment so that there will be a clearance of 0 to 0.05 mm between the needles and the loopers in the forward and backward movements of the loopers.

Model 345/P

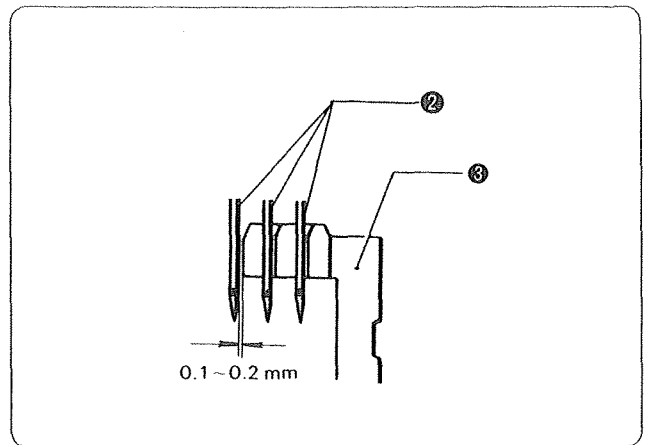
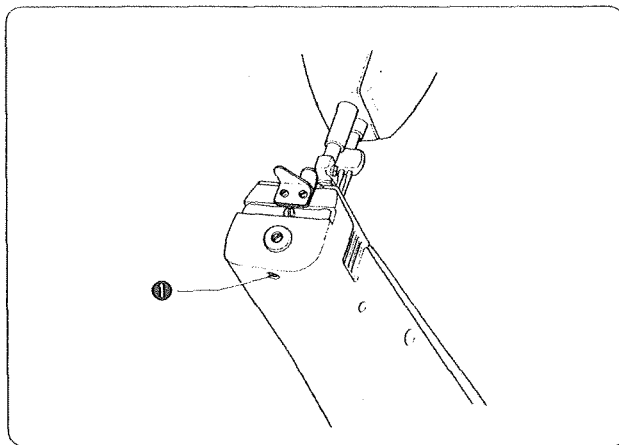
In the forward movement of the loopers, push needles by loopers by 0.2 mm. In the backward movement of the loopers, adjust that the clearance between the loopers and the needles will be 0.2 to 0.3 mm.

<Adjusting Method>

1. Remove forward feed arm cover ①, and turn the pulley toward yourself until the longitudinal eccentric wheel stop screw shows itself at adjusting hole ②.
2. Loosen the longitudinal eccentric wheel stop screw until it hardly comes out of the surface of the wheel, turn the pulley again toward yourself, and loosen the other stop screw.
3. With the screwdriver holding the stop screw, turn the pulley to adjust the clearance between the needles and the loopers.
4. After the adjustment, retighten the two stop screws and the forward feed arm cover screw.

4. Needle Guard Adjustment

Model 345-3



Make an adjustment so that, when the loopers meet the needles in their forward movement, there will be a clearance of 0.1 to 0.2 mm between the needles and the needle guard.

<Adjusting Method>

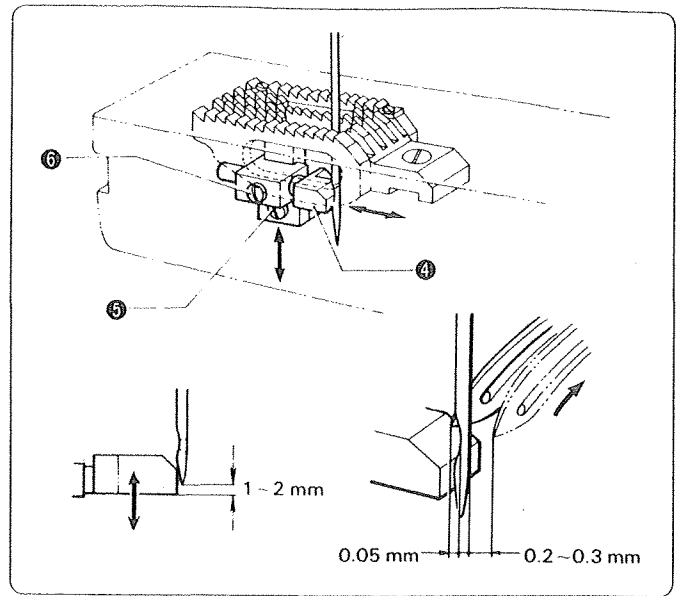
1. Turn the pulley toward yourself until the needles come down to the lowest position.
2. Loosen stop screw ① from the underside of the tip of the forward feed arm.
3. Adjust the clearance between needles ② and needles guard ③ to somewhere from 0.1 to 0.2 mm by moving needle guard ③.
4. After the adjustment, retighten stop screw ① securely.

Model 34S/P

The clearance between the needles and the tips of the loopers will be 0.05 mm, pushing the needles by needle guard ④.

<Adjusting Method>

1. Turn the pulley toward yourself until the needles come down to the lowest position.
2. Loosen stop screw ⑤, and raise or lower needle guard ④ so that the bottom ends of the needle eyes will be about 0.5 mm above the bottom of needle guard ④.
3. Turn the pulley toward yourself again until the tips of the loopers come to the centers of the needles.
4. Loosen stop screw ⑥, move needle guard ④ to the left or to the right, and adjust so that the clearance between the needles and the tips of the loopers will be 0.05 mm, pushing needle points by needle guard ④. At this time, please make sure that the clearance between the loopers and the needles is 0.2~0.3 mm in the backward movement of the loopers.



⑤ Feed Dog Height Adjustment

Model 34S-3

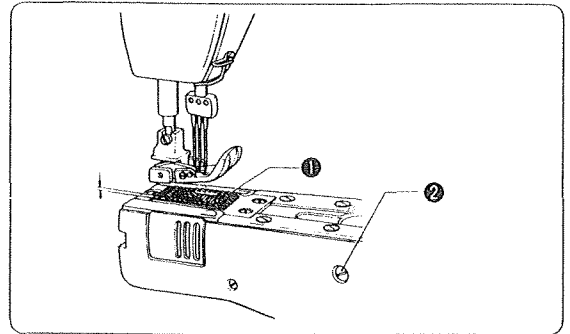
Make an adjustment so that, when feed dog ① is at the highest position, the feed dog will be 0.8 mm above the top surface of the needle plate.

Model 34S/P

Make an adjustment so that the highest part of the feed dog will be 1.2 mm above the top surface of the needle plate.

<Adjusting Method>

Adjusting the feed dog height by turning feed base eccentric shaft ②.

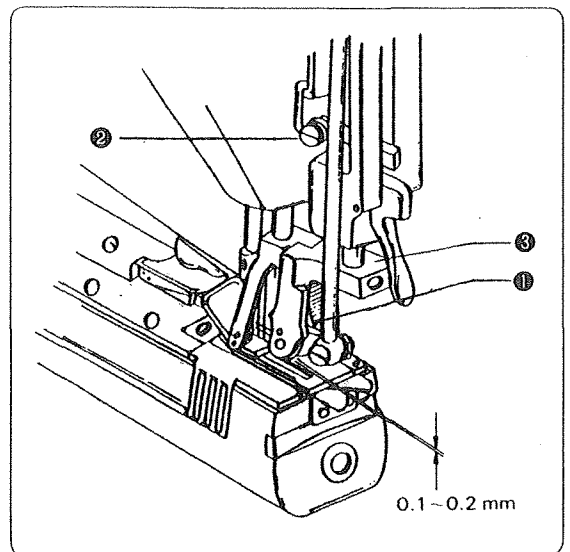


⑥ Puller Height Adjustment

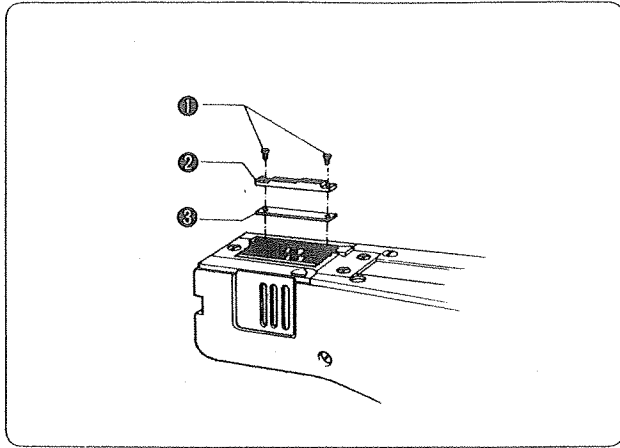
Adjust the height of puller ① so that it is 0.1 to 0.2 mm high from the top of the needle plate.

<Adjusting Method>

Loosen set screw ②, and move puller support ③ up or down until puller ① is 0.1 to 0.2 mm above the top of the needle plate.



7 Installing the Spacer (For the denim specifications)



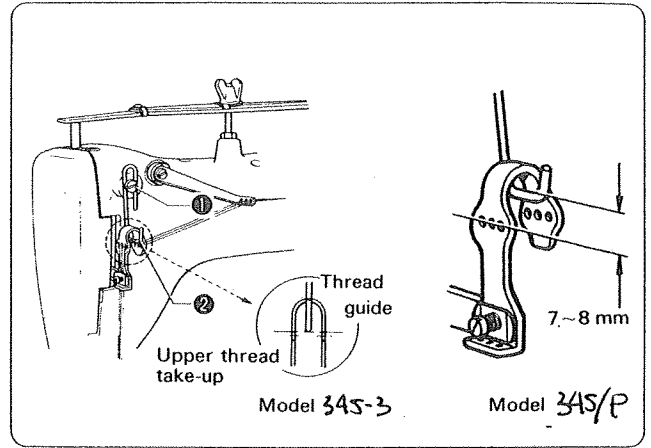
If stitch irregularities develop in sewing very heavy materials, adjust the sub-feed dog to the correct height by spacer.

(Adjusting Method)

1. Remove set screw ① and sub-feed dog ②.
2. Place spacer ③ under sub-feed dog ② and retighten set screw ①.

※The spacer is in the parts box.

8 Upper Thread Take-up Thread Guide Adjustment



Model 34S-3

Make an adjustment so that, when the needle bar is down at the lowest position, the top of the upper thread take-up thread hole meets the bottom of the thread guide.

Model 34S/P

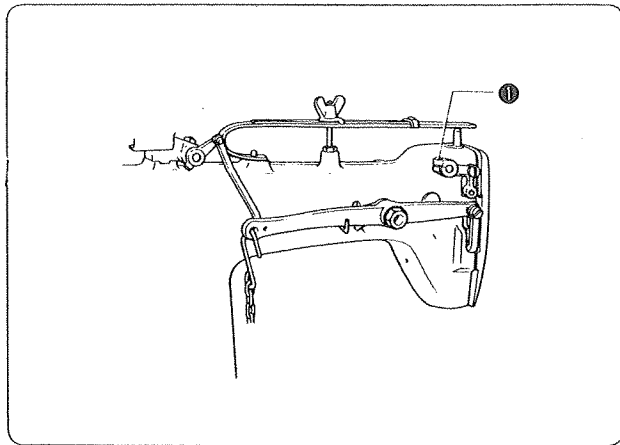
Please adjust the distance between the center of the upper thread take-up and the top of the thread guide will be 7~8 mm.

(Adjusting Method)

1. Turn the pulley toward yourself until the needle bar is down at the lowest position.
2. Loosen set screw ①, and move upper thread take-up thread guide ② up or down until its bottom meets the top of the upper thread take-up thread hole.

※The higher the upper thread take-up thread guide ②, the greater will be the upper thread loops.

9 Thread Release Lever Adjustment

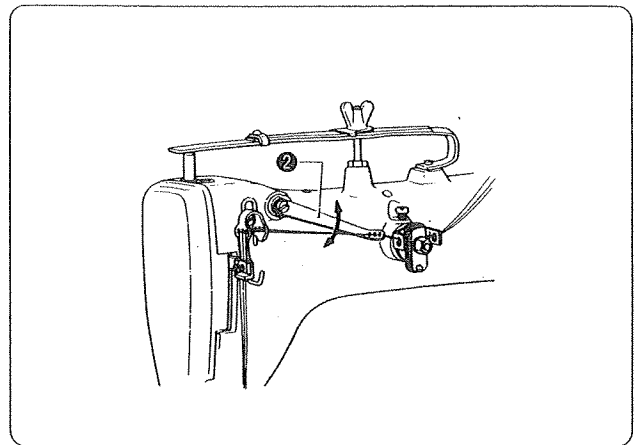


Make an adjustment so that, when the needle bar is down at the lowest position, the thread release lever thread hole meets the thread hole in upper thread tension bracket ③.

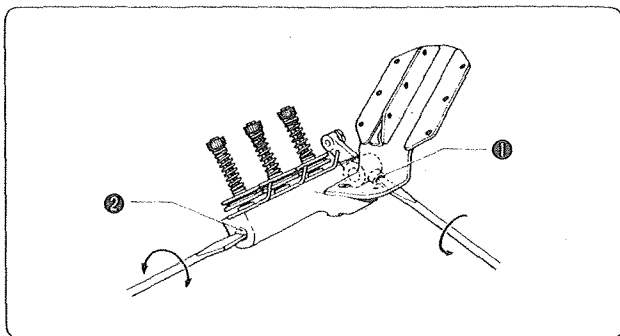
(Adjusting Method)

1. Turn the pulley until the needle bar is down at the lowest position.
2. Loosen set screw ①, and raise or lower thread release lever ② until its thread hole meets the thread hole in upper thread tension bracket ③.

※The higher the thread release lever, the tighter will be the stitches.



10 Thread Release Shaft Adjustment



Make an adjustment so that the thread tension discs will loosen when the presser foot is raised, and tighten when the presser foot is lowered.

(Adjusting Method)

1. Loosen stop screw ①.
2. Make an adjustment by turning thread release shaft ② so that the thread tension discs will begin to loosen when the presser foot is raised 4 mm above the top surface of the needle plate.
3. After the adjustment, retighten stop screw ① securely.

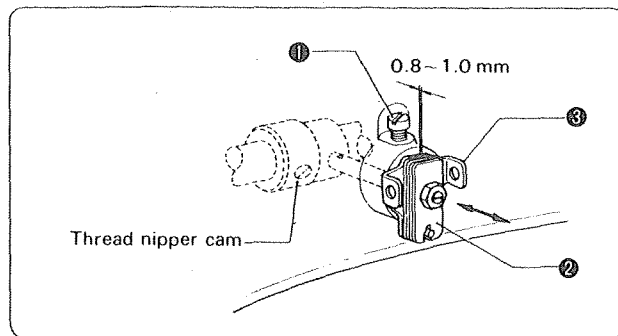
12 Lower Thread Take-up Timing Adjustment

Make an adjustment so that, when the loopers begin to move backward, lower thread take-up ① will rise about 5 to 7 mm above lower thread take-up bracket ②.

(Adjusting Method)

1. Insert a screwdriver into the adjusting hole in the bed, and loosen two stop screws ③.
2. Raise lower thread take-up ① 5 to 7 mm above thread take-up bracket ②.
3. After the adjustment, retighten two stop screw ③.

11 Upper Thread Nipper Adjustment



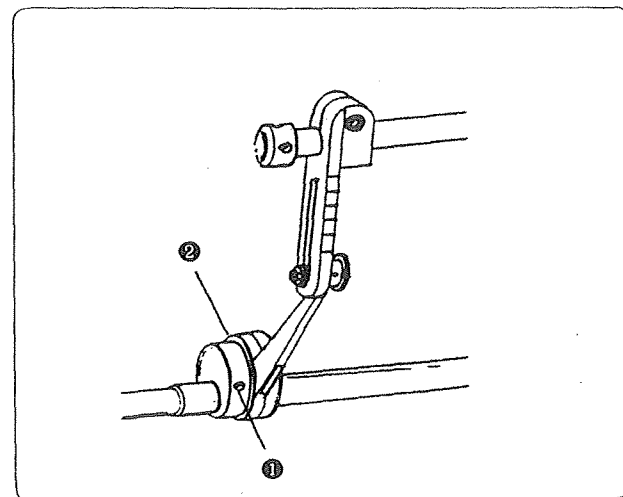
Adjust the clearance between the upper thread nipper tension bracket and tension plates to somewhere between 0.8 mm and 1.0 mm.

(Adjusting Method)

1. Loosen stop screw ①, and move upper thread-nipper tension bracket ② in or out until the clearance between it and tension plates ③ is somewhere from 0.8 to 1.0 mm.
- ※Stitch tightness can be improved by narrowing the clearance between upper thread nipper tension bracket ② and the arm.

13 Puller Device Timing Adjustment

1. With 3mm wrench to loosen the screw ① & ②
2. The timing of the feed will be starting when the needle is away from the needle plate about 5 or 6mm, and stopping at 10mm.
3. After adjusting the timing, retighten the screw ① & ②.



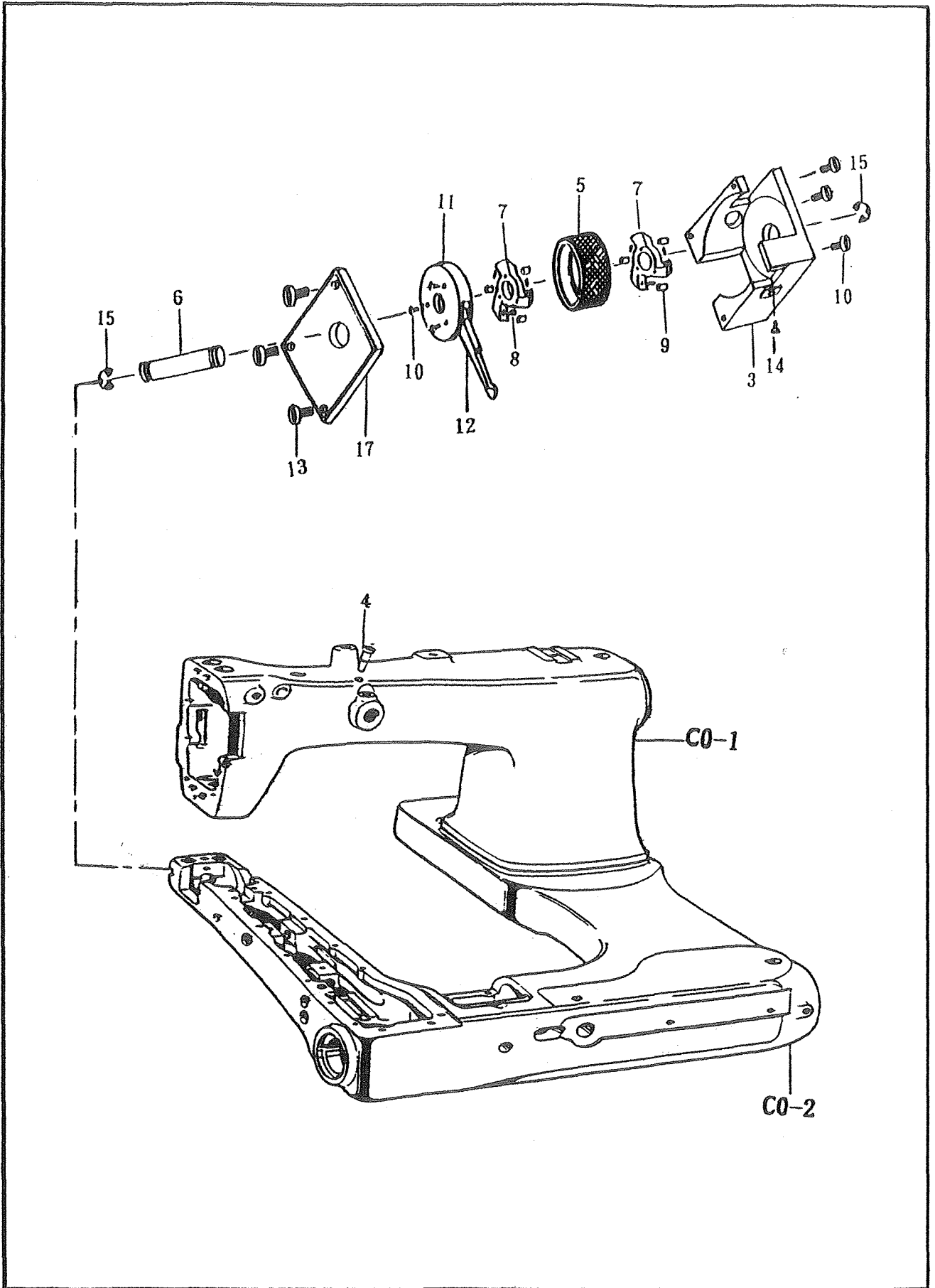
TROUBLESHOOTING

Trouble	Cause	Inspection	Remedy	Page
Thread breaks.	Needles installed improperly.	Direction of long groove.	Refer to instructions for needle installing.	5
	Upper thread tension too great.	Upper thread tension.	Adjust upper thread tension.	7
	Lower thread tension too great.	Lower thread tension.	Adjust lower thread tension.	7
	Thread release lever out of position.	Thread release lever position.	Adjust thread release lever.	13
	Needle eyes too small for threads.	Needle size and thread count.	Refer to the section on "Needles and Threads".	5
	Loopers damaged.		Smooth loopers with sandpaper or buff.	/
Needles break.	Needles damaged.		Replace needles with good ones.	5
	Needles hit loopers.	Clearance between needles and loopers.	Adjust looper timing to avoid contact with needles.	11
	Needles installed improperly.	Direction of long groove.	Refer to instructions for needle installing.	5
	Needles hit needles guard.	Clearance between needles and needles guard.	Adjust needles guard.	11
	Needle eyes too small for threads.	Needle size and thread count.	Refer to the section on "Needles and Threads".	5
Stitches skip.	Needles installed improperly.	Direction of long groove.	Refer to instructions for needle installing.	5
	Looper points are dull.		Replace loopers with good ones.	10 11
	Needle and looper timing wrong.	Needle and looper timing.	Adjust needle and looper timing.	10
	Clearance between needles and loopers too great.	Clearance between needles and loopers.	Adjust clearance between needles and loopers.	11
	Lower thread take-up timing wrong.	Lower thread take-up timing.	Adjust lower thread take-up timing.	14
	Upper threads loose.	Upper thread tension too small.	Upper thread tension.	Adjust upper thread tension.
Lower thread tension too great.		Lower thread tension.	Adjust lower thread tension.	7
Upper thread take-up thread guide out of position.			Adjust upper thread take-up thread guide position.	13
Upper thread nipper does not tighten upper threads.		Tension plate clearance.	Adjust upper thread nipper.	14

Trouble	Cause	Inspection	Remedy	Page
Machine does not feed work.	Feed dog too low.	Feed dog height.	Adjust feed dog height.	12
	Presser foot pressure too small.	Presser foot pressure.	Adjust presser foot pressure.	8
	Feed dog worn out.		Have serviceman check it.	
	Presser foot floats and does not fully press work.		Have serviceman check it.	
	Feed dog and presser foot work on one side only.		Have serviceman check them.	
Non-alignment and wrinkles (Model: 345-3)	Sub feed dog height incorrect.	Sub feed dog height.	Adjust sub feed dog height.	13
	Presser foot pressure incorrect.	Presser foot pressure.	Adjust presser foot pressure.	8
	Feed dog height incorrect.	Feed dog height.	Ajust feed dog height.	12
Non-alignment and wrinkles (Model: 345/P)	Puller timing wrong.	Puller timing.	Adjust puller device timing.	14
	Puller feed incorrect.	Puller feed.	Adjust puller feed.	8
	Presser foot pressure incorrect.	Presser foot pressure.	Adjust presser foot pressure.	8
	Feed dog height incorrect.	Feed dog height.	Adjust feed dog height.	12

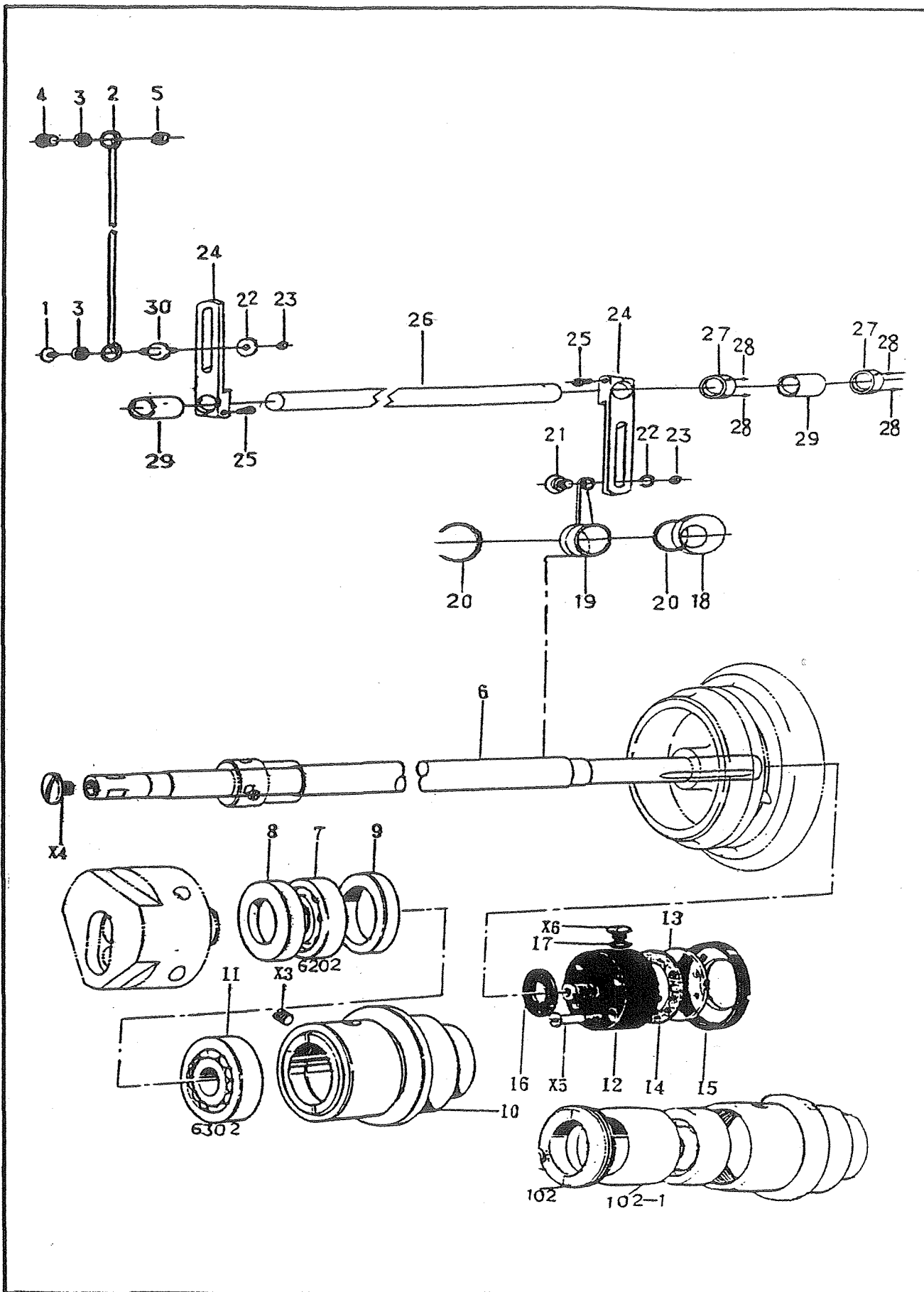
CONTENTS

1. C0- MACHINE BODY
2. C1- UPPER SHAFT MACHANISM
3. C2- NEEDLE BAR MECHANISM
 - FEED MECHANISM
4. C3- PULLY MECHANISM
5. C4- PRESSER BAR MECHANISM
6. C5- LOOPER MECHANISM
7. C6- UPPER THREADING MECHANISM
8. C7- LOWER THREADING MECHANISM
9. C8- LOWER SHAFT MECHANISM
 - GAUGE PARTS
- 10 C9- GAUGE PARTS(P)
11. C10- GAUGE PARTS(DP)
12. C11- PULLER DEVICE MECHANISM
13. C12- ACCESSORIES



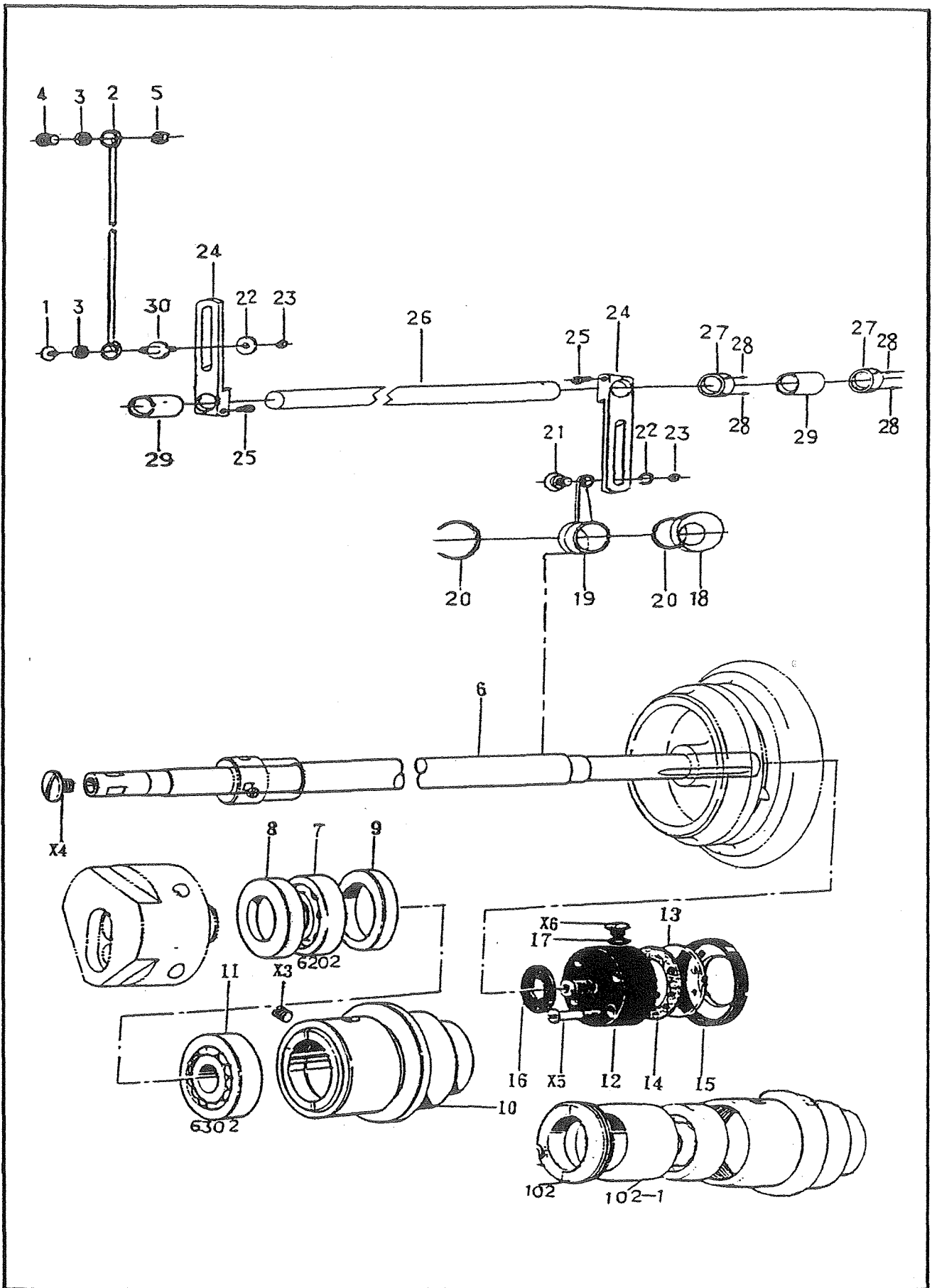
SPARE PARTS CATALOG

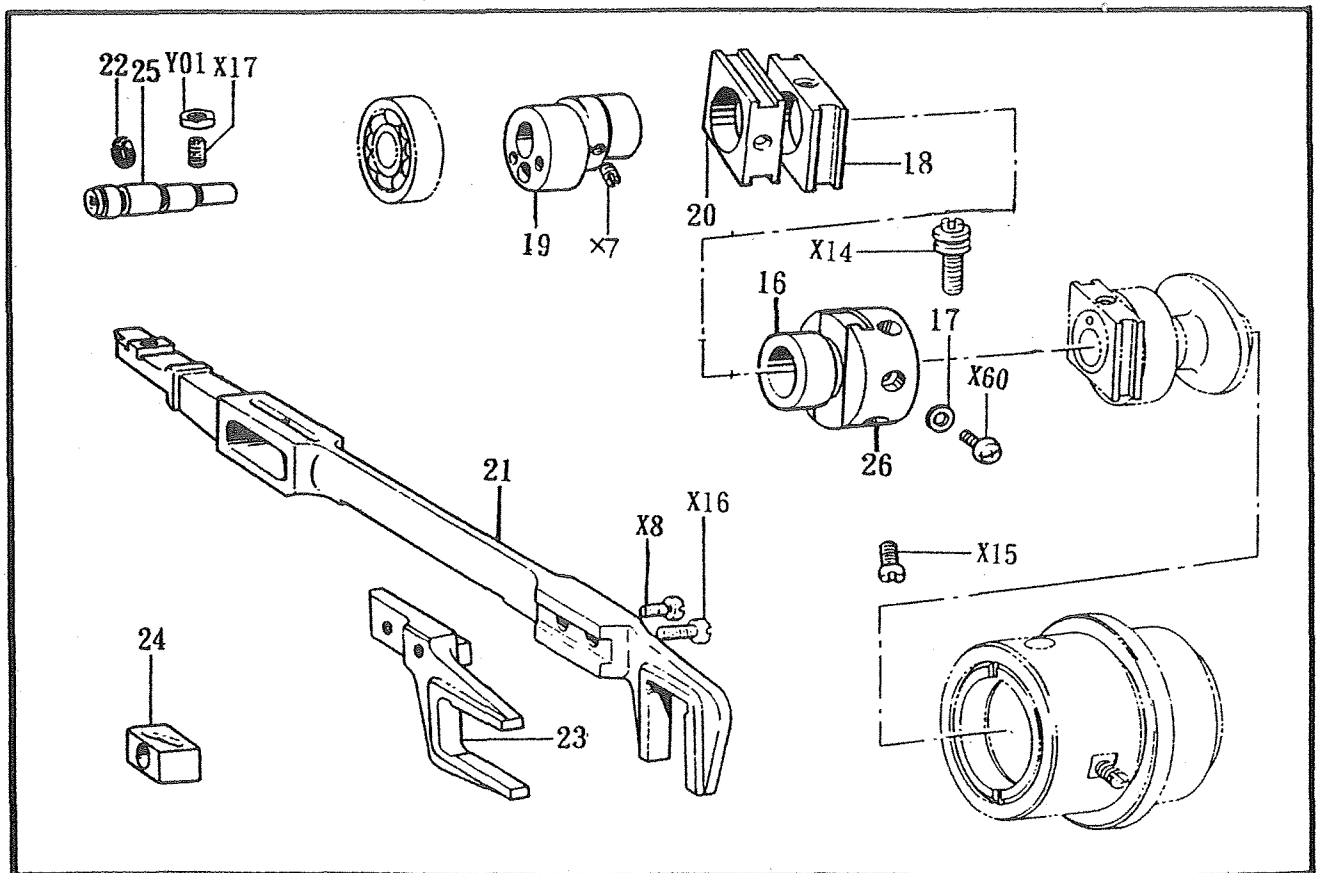
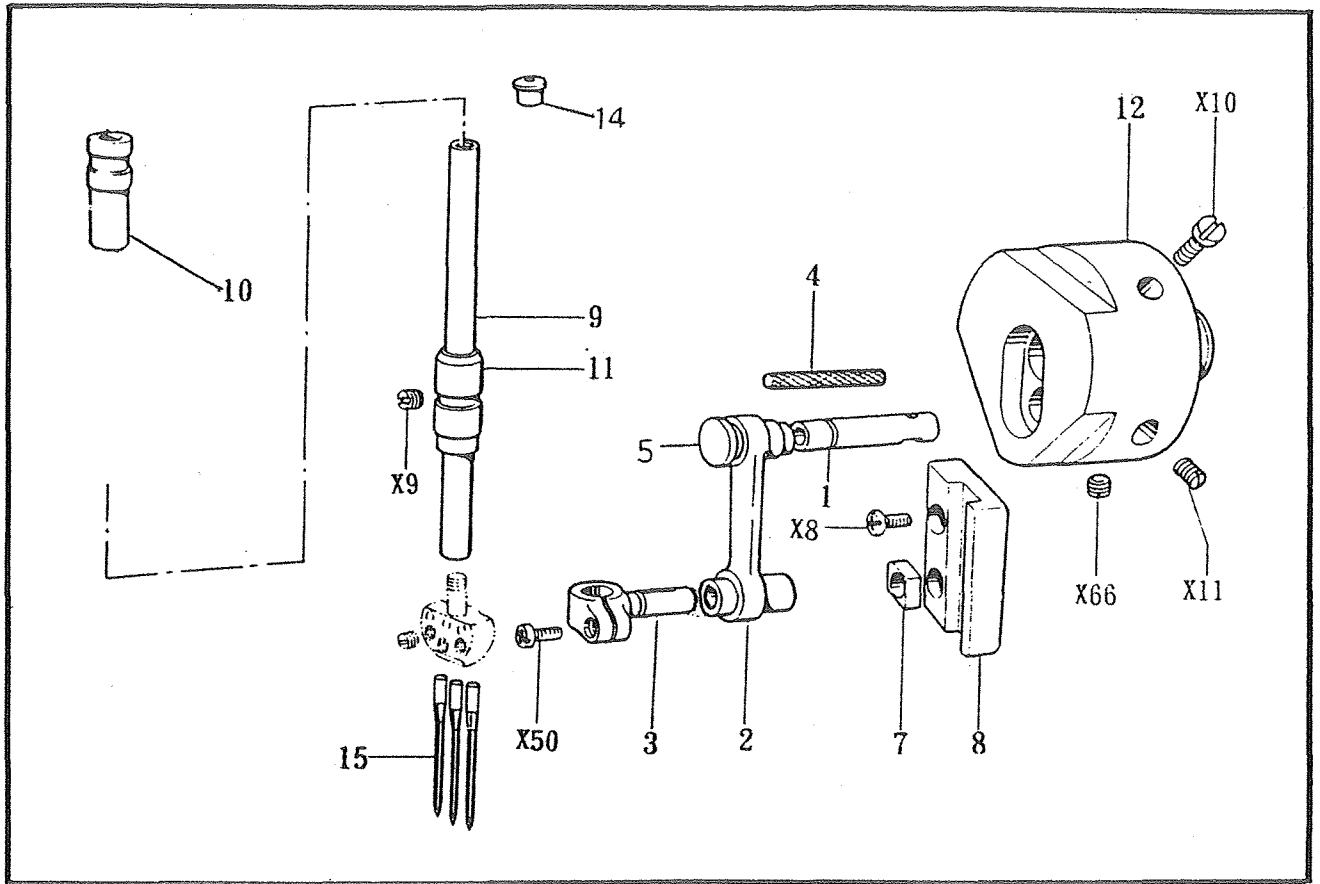
REF .NO.	NAME OF PARTS
C 0 - 1	MACHINE HEAD
C 0 - 2	MACHINE REST BOARD
C 0 - 3	LOWER WHEEL SEAT
C 0 - 4	OIL PLUG
C 0 - 5	LOWER WHEEL
C 0 - 6	LOWER WHEEL CONNECTION
C 0 - 7	ONE WAY TRIANGULAR AXLE
C 0 - 8	ONE WAY STILL SPRING
C 0 - 9	ONE WAY STILL BALL
C 0 - 10	SCREW 238*6
C 0 - 11	ONE WAY PUSHING PLATE
C 0 - 12	FEED DOG PUSHING PLATE LINK
C 0 - 13	SCREW 9/64*40
C 0 - 14	SCREW 11/64*40
C 0 - 15	CHOCK RING (E RING)
C 0 - 17	LOWER WHEEL SEAT CAP



SPARE PARTS CATALOG

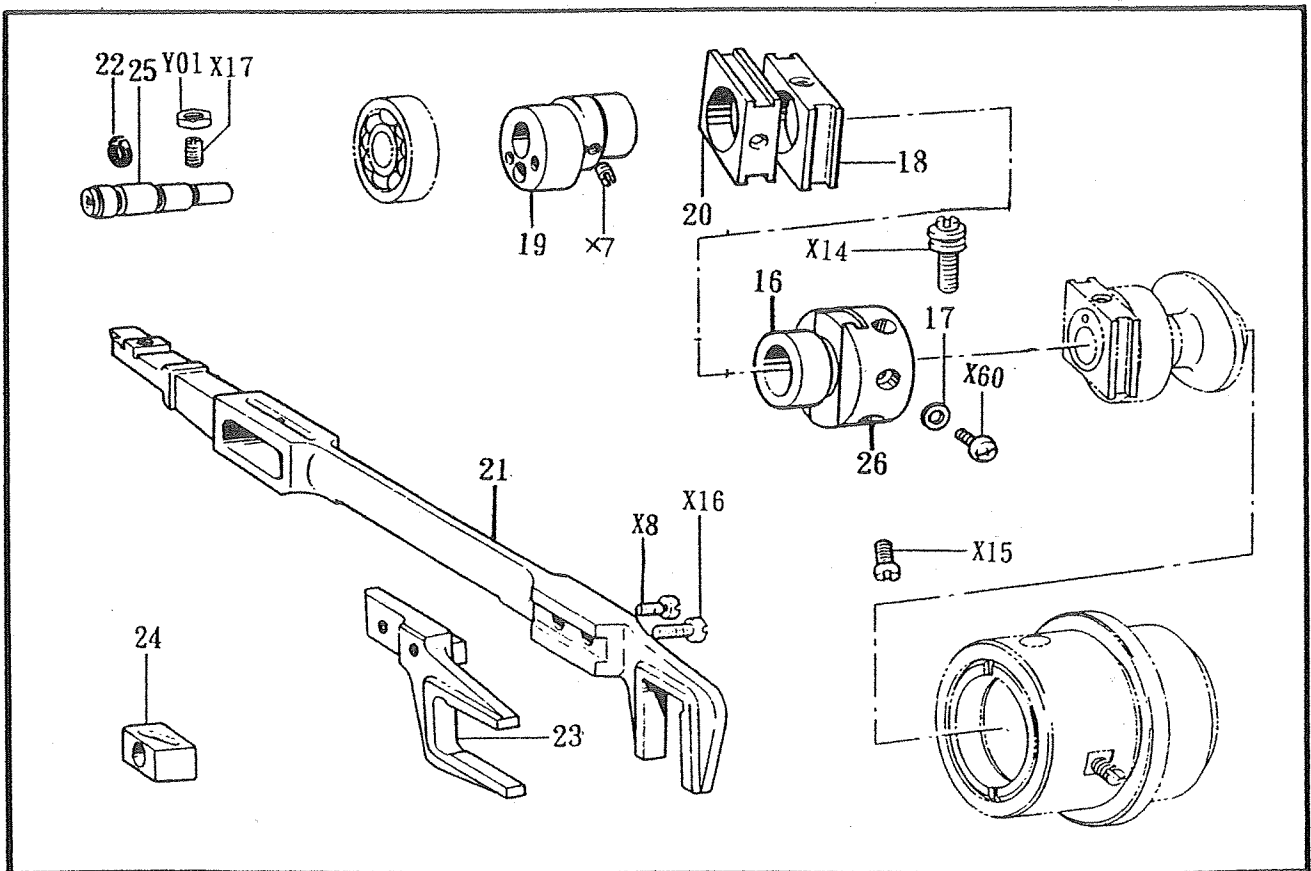
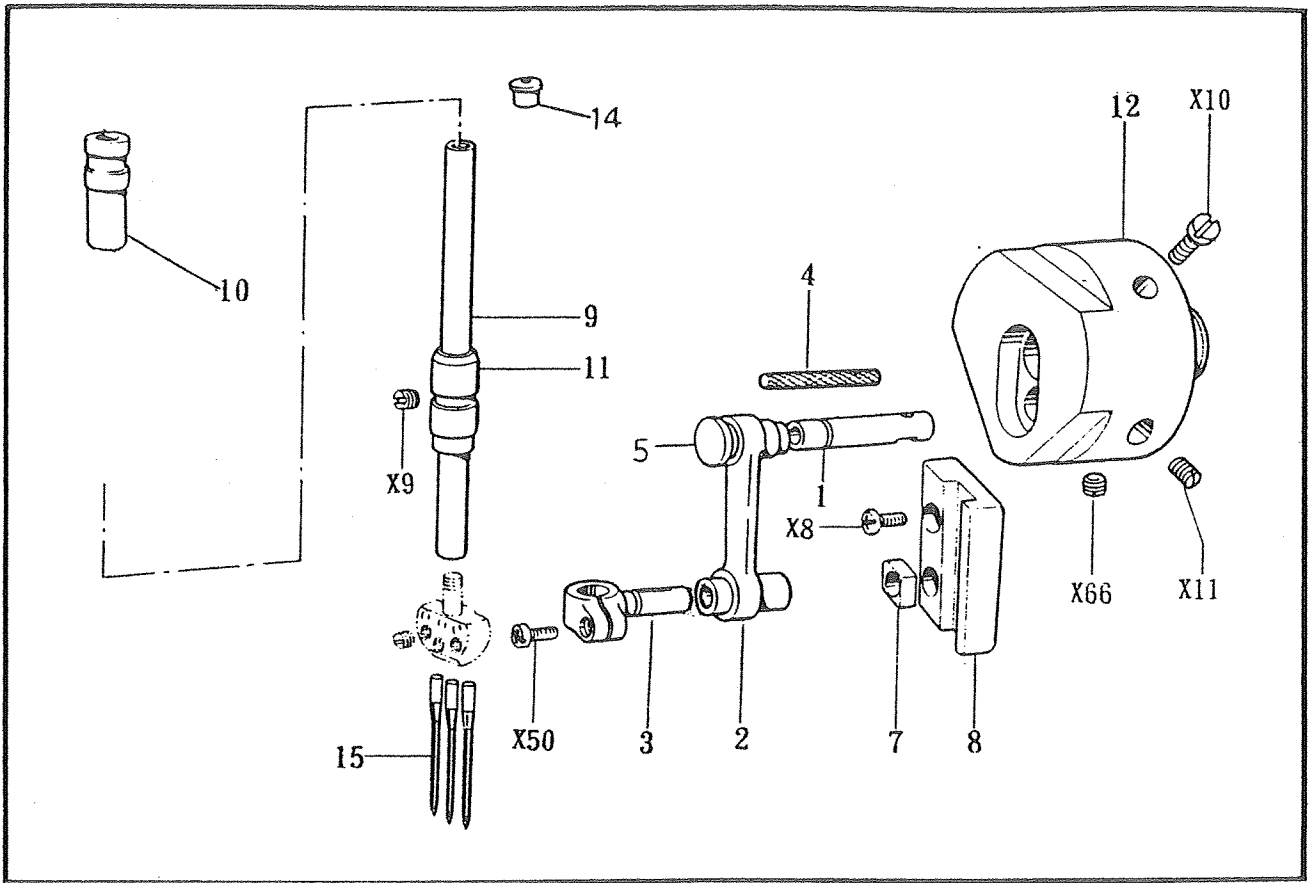
REF .NO.	NAME OF PARTS
C 1 - 1	PULL BAR ENDING SCREW
C 1 - 2	VERTICAL PULL BAR
C 1 - 3	PULL BAR BEARING
C 1 - 4	VERTICAL PULL BAR FIXING SCREW (LOWER)
C 1 - 5	PULL BAR SCREW NUT
C 1 - 6	UPPER SHAFT
C 1 - 7	BEARING 6202
C 1 - 8	UPPER SHAFT BALL BEARING (LEFT)
C 1 - 9	OIL STOPPER
C 1 - 10	BEARING CASE ASSEMBLY
C 1 - 11	BEARING 6302
C 1 - 12	OIL TANK
C 1 - 13	OIL GAUGE WINDOW
C 1 - 14	PACKING
C 1 - 15	OIL GAUGE FLANGE
C 1 - 16	OIL TANK PACKING
C 1 - 17	PACKING
C 1 - 18	UPPER WHEEL ECCENTRIC WHEEL
C 1 - 19	UPPER WHEEL MOVING PULL BAR ("8"TYPE)
C 1 - 20	CHOCK RING
C 1 - 21	PULL BAR SCREW
C 1 - 22	FIXING PULL BAR SCREW WASHER
C 1 - 23	PULL BAR SCREW NUT
C 1 - 24	THICKNESS ADJUSTING PULL BAR
C 1 - 25	PULL BAR FIXING PULL BAR
C 1 - 26	UPPER WHEEL CONNECTION
C 1 - 27	MOVABLE LEFT-RIGHT CHOCK RING
C 1 - 28	CHOCK RING SCREW
C 1 - 29	CONNECTION COPPER TUBE
C 1 - 30	VERTICAL PULL BAR
C 1 - 102	BEARING FIXING SCREW





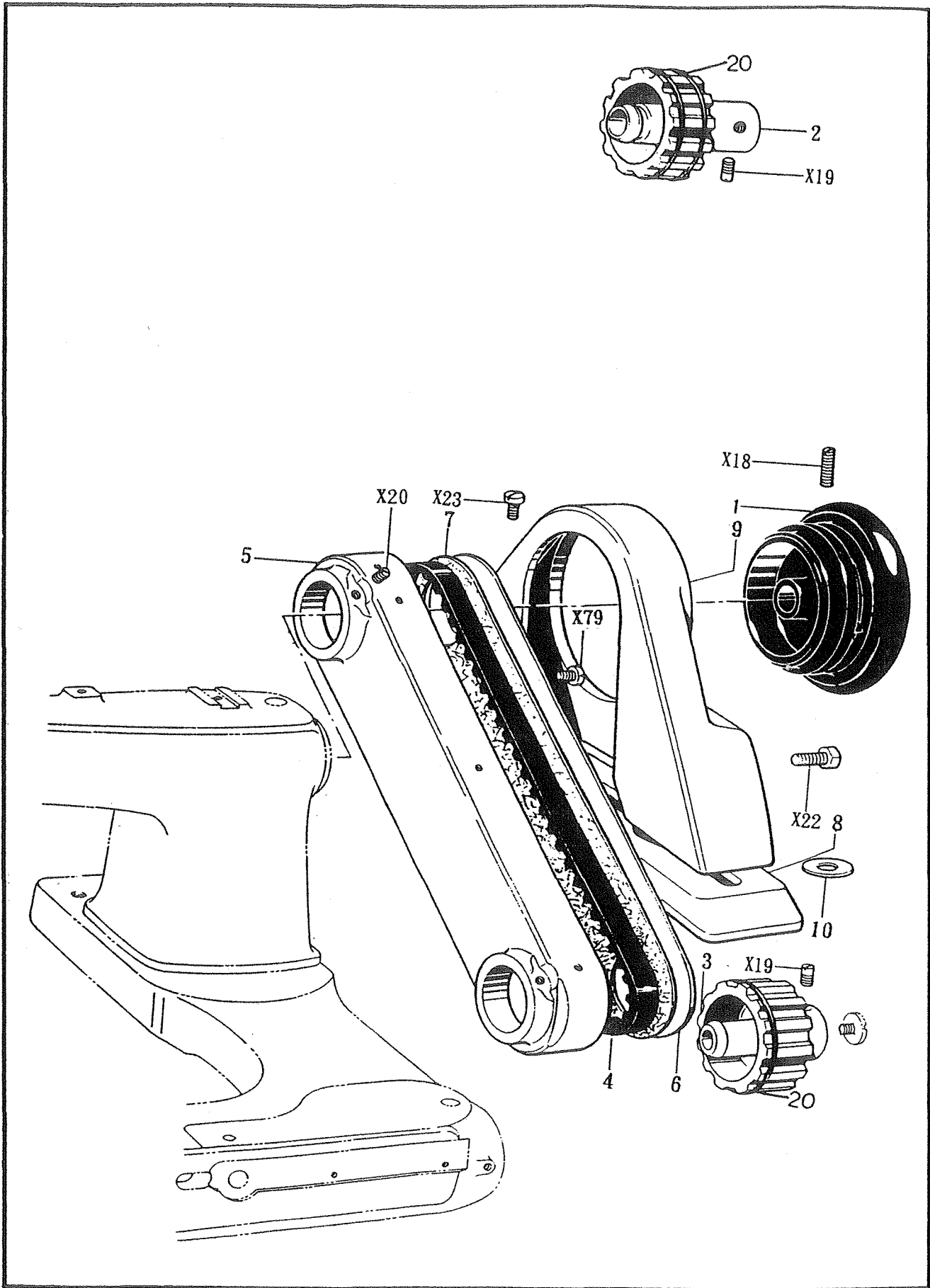
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 2 - 1	NEEDLE BAR CRANK
C 2 - 2	NEEDLE BAR CRANK ROD
C 2 - 3	NEEDLE BAR BRACKET
C 2 - 4	WICK
C 2 - 5	OIL LEAK PROOF CAP
C 2 - 7	NEEDLE BAR GUIDE SLIDE BLOCK
C 2 - 8	NEEDLE BAR GUIDE
C 2 - 9	NEEDLE BAR
C 2 - 10	NEEDLE BAR BUSHING (UPPER)
C 2 - 11	NEEDLE BAR BUSHING (LOWER)
C 2 - 12	THREAD TAKE-UP CRANK
C 2 - 14	OIL CAP
C 2 - 15	NEEDLE
C 2 - 16	FEED DOG ECCENTRIC AXLE
C 2 - 17	WASHER
C 2 - 18	ECCENTRIC WHEEL SLEEVE
C 2 - 19	ECCENTRIC WHEEL WITH SCREW
C 2 - 20	ECCENTRIC WHEEL SLEEVE
C 2 - 21	FEED BAR SLIDE BLOCK ASSEMBLY
C 2 - 22	PACKING
C 2 - 23	FEED LIFTING FORK
C 2 - 24	FEED BAR SLIDE BLOCK
C 2 - 25	ECCENTRIC SHAFT
C 2 - 26	FEED DOG ECCENTRIC SET
C 2 - X 7	SCREW 6.35
C 2 - X 8	SCREW 437*10
C 2 - X 9	SCREW 5.95
C 2 - X 10	SCREW 5.95
C 2 - X 11	SCREW 6.35
C 2 - X 14	FEED ECCENTRIC ADJUSTING SCREW
C 2 - X 15	SCREW 5.95



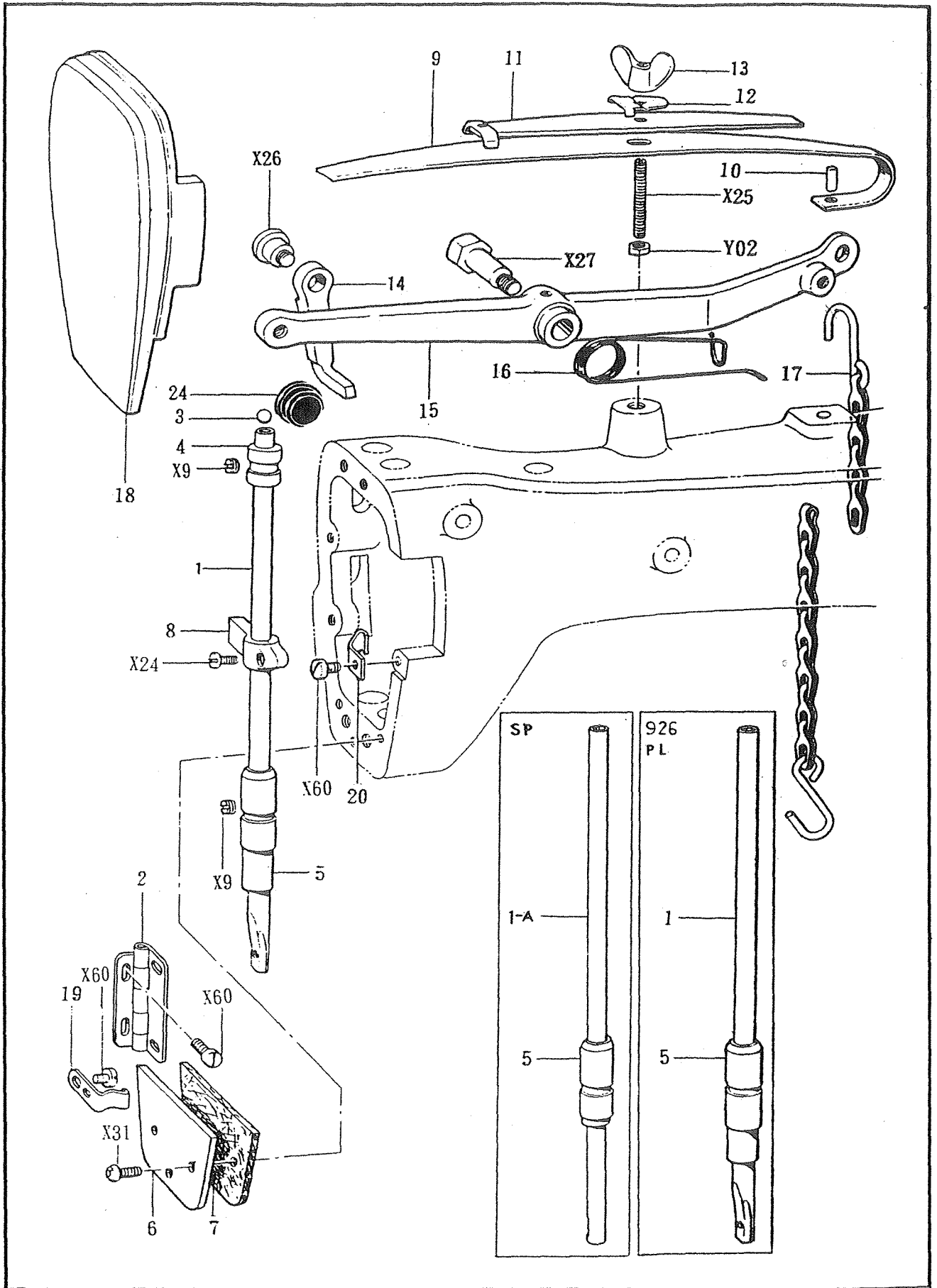
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 2 - X 1 6	SCREW 437*12
C 2 - X 1 7	SCREW 5.95
C 2 - X 5 0	SCREW 357*8
C 2 - X 6 0	SCREW 3.75*5
C 2 - X 6 6	SCREW 6.35
C 2 - Y 0 1	NUT 5.95



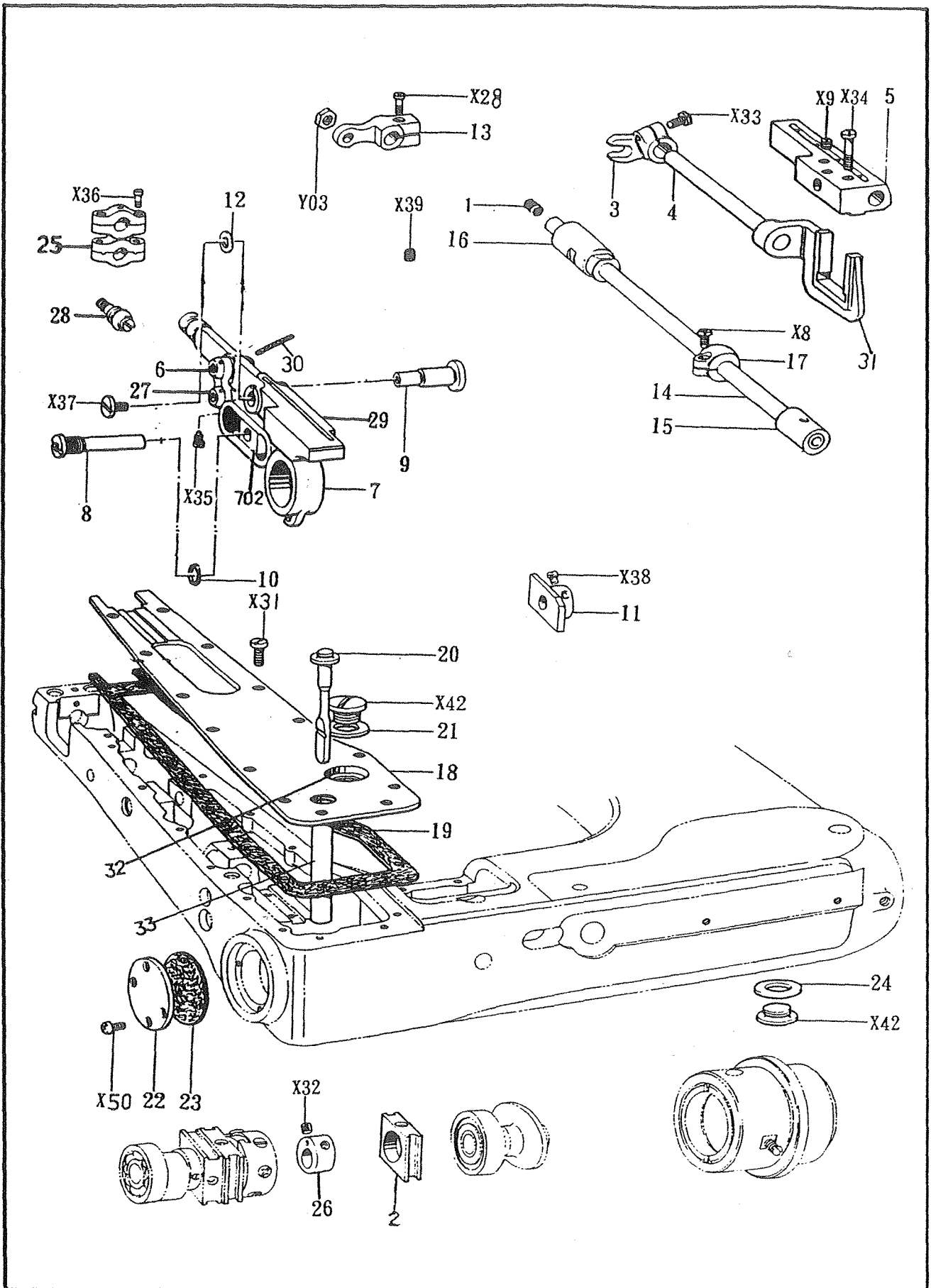
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 3 - 1	PULLEY
C 3 - 2	TIMING BELT WHEEL ASSEMBLY (UPPER)
C 3 - 3	TIMING BELT WHEEL ASSEMBLY (LOWER)
C 3 - 4	TIMING BELT
C 3 - 5	BELT COVER
C 3 - 6	BELT COVER PLATE
C 3 - 7	PACKING
C 3 - 8	PULLEY COVER BASE
C 3 - 9	PULLEY COVER
C 3 - 10	WASHER
C 3 - 20	SPRING COIL
C 3 - X18	SCREW 5.95
C 3 - X19	SCREW 6.35*12
C 3 - X20	SCREW 6.35
C 3 - X22	SCREW 11.11
C 3 - X23	SCREW 6.35
C 3 - X79	SCREW 476*8



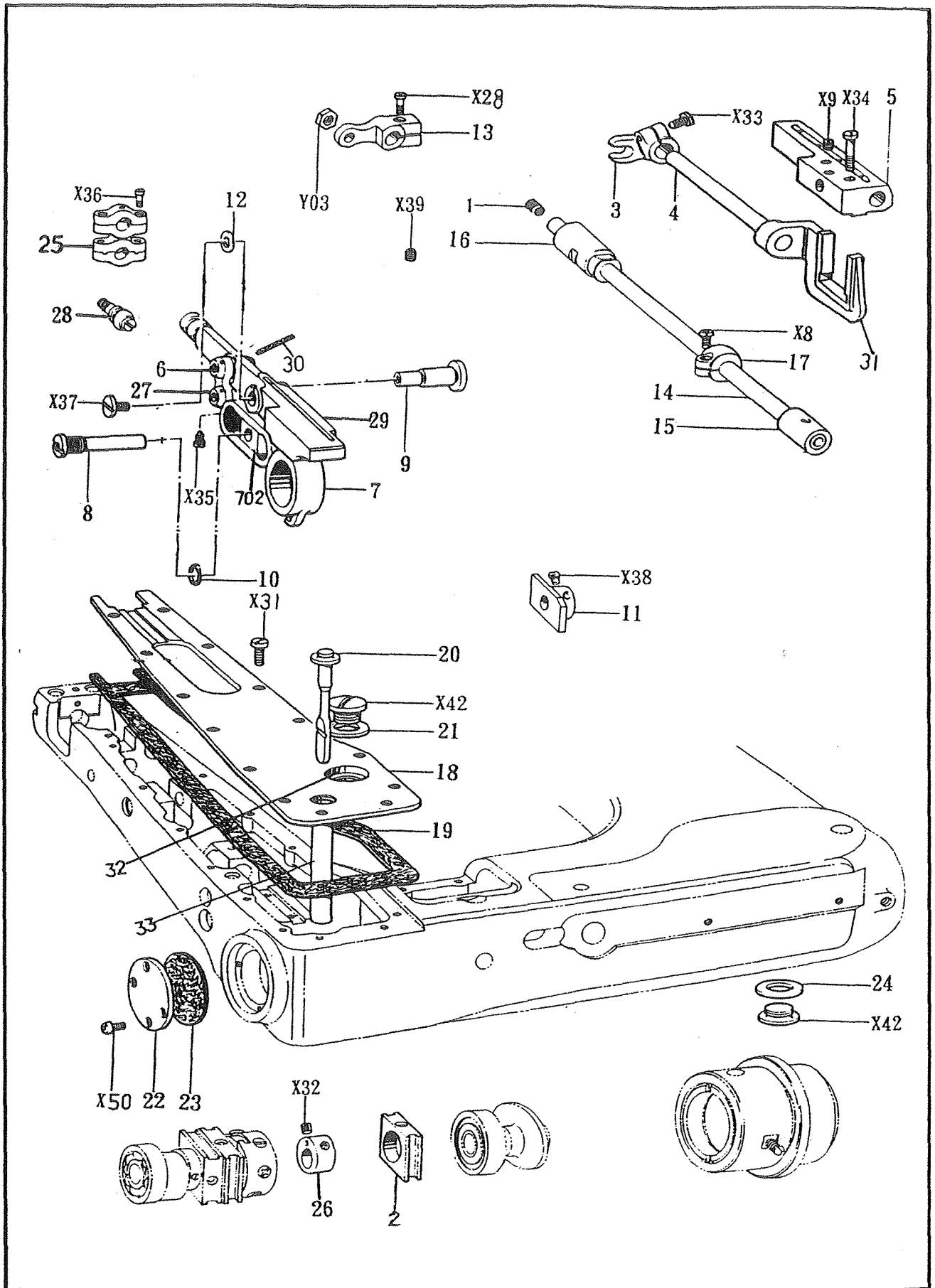
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 4 - 1	PRESSER BAR
C 4 - 2	FACE PLATE UPPER HINGE ASSEMBLY
C 4 - 3	STEEL BALL
C 4 - 4	PRESSER BAR BUSHING (UPPER)
C 4 - 5	PRESSER BAR BUSHING (LOWER)
C 4 - 6	FACE PLATE (LOWER)
C 4 - 7	PACKING
C 4 - 8	PRESSER BAR CLAMP ASSEMBLY
C 4 - 9	PRESSER PLATE SPRING
C 4 - 10	PRESSER PLATE SPRING PIN
C 4 - 11	PRESSER PLATE SPRING ASSEMBLY
C 4 - 12	GUIDE WASHER
C 4 - 13	WING NUT
C 4 - 14	PRESSER BAR LIFTER
C 4 - 15	KNEE LIFTER LEVER
C 4 - 16	KNEE LIFTER SPRING
C 4 - 17	PRESSER FOOT LIFTER CHAIN ASSEMBLY
C 4 - 18	FACE PLATE (UPPER)
C 4 - 19	STOPPER SPRING PLATE (L)
C 4 - 20	STOPPER SPRING PLATE (S)
C 4 - 24	OIL CAP
C 4 - X 9	SCREW 5.95
C 4 - X 24	SCREW 4.37
C 4 - X 25	PRESSER ADJUSTING SCREW
C 4 - X 26	STUD SCREW 5.95
C 4 - X 27	STUD SCREW 7.94
C 4 - X 31	SCREW 357*10
C 4 - X 60	SCREW 3.75
C 4 - Y 02	NUT 4.76



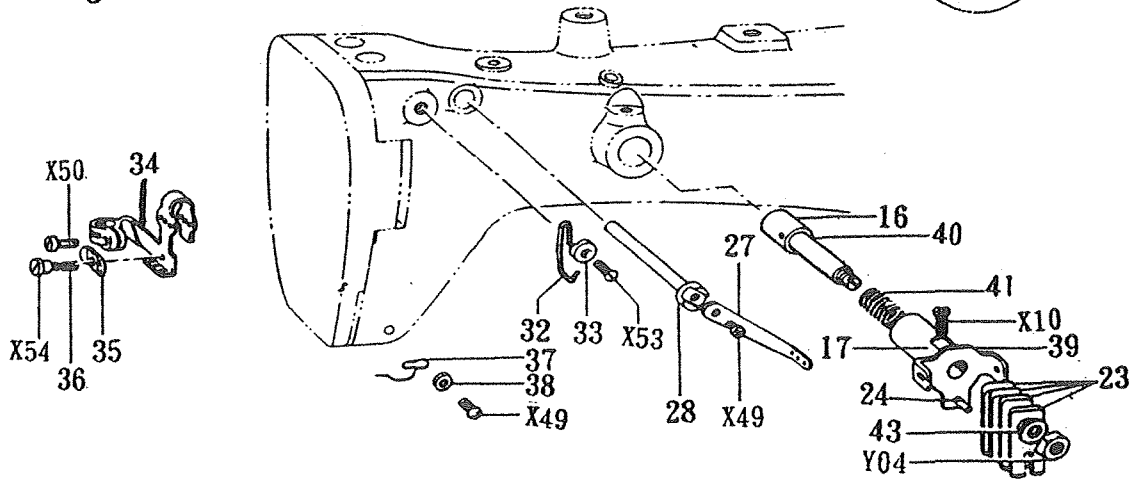
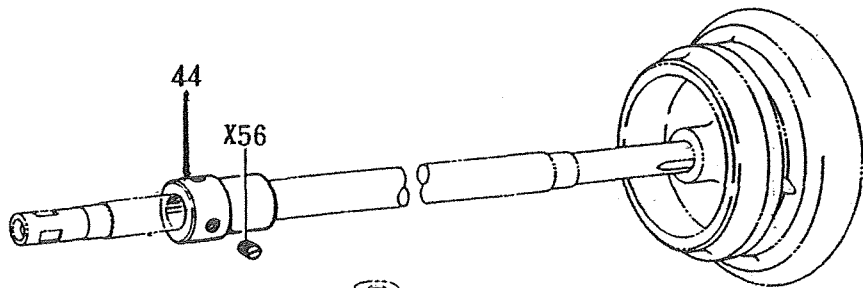
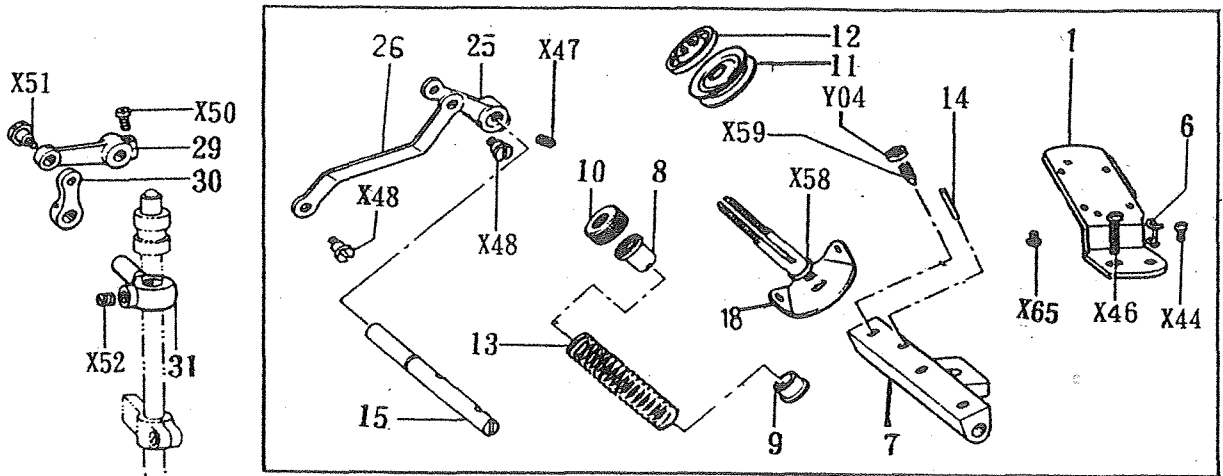
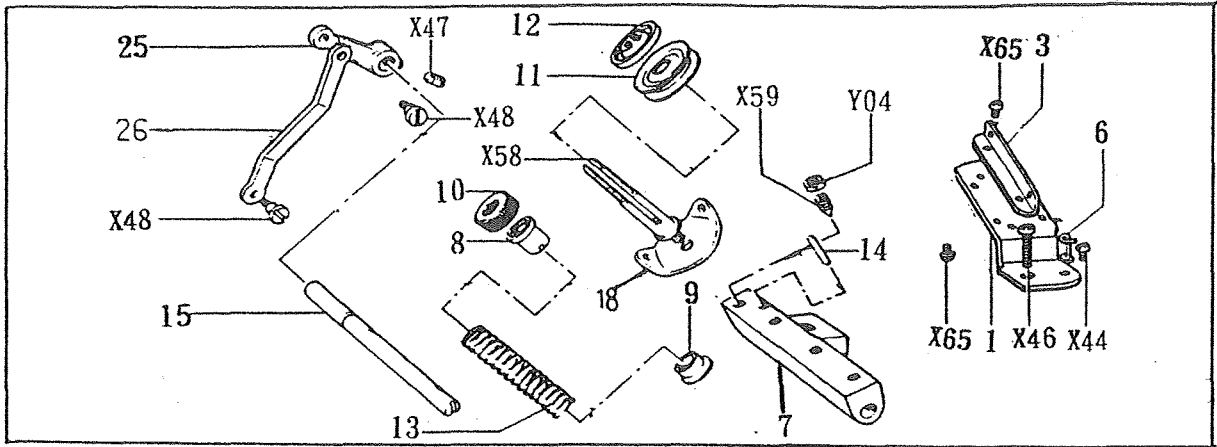
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 5 - 1	OIL CAP
C 5 - 2	ECCENTRIC WHEEL SLEEVE
C 5 - 3	LOOPER FEEDING FORK
C 5 - 4	LOOPER FEEDING SHAFT
C 5 - 5	LOOPER FEEDING SHAFT RECEIVER
C 5 - 6	PIN
C 5 - 7	LOOPER FRONT-REAR TRANSMISSION
C 5 - 8	SLIDE BROCK SHAFT
C 5 - 9	LOOPER LEVER SHAFT
C 5 - 10	PACKING
C 5 - 11	LOOPER CONNECTING ROD GUIDE PLATE
C 5 - 12	WASHER
C 5 - 13	LOOPER SHAFT CLAMP
C 5 - 14	LOOPER SHAFT
C 5 - 15	LOOPER SHAFT BUSHING (FRONT)
C 5 - 16	LOOPER SHAFT BUSHING (REAR)
C 5 - 17	SET COLLAR
C 5 - 18	LOOPER FEED ARM LID ASSEMBLY
C 5 - 19	PACKING
C 5 - 20	OIL GAUGE
C 5 - 21	PACKING
C 5 - 22	CAP PLATE
C 5 - 23	PACKING
C 5 - 24	PACKING
C 5 - 25	"8" TYPE TRANSMISSION DEVICE
C 5 - 26	ECCENTRIC WITH SCREW
C 5 - 27	EYEPIECE
C 5 - 28	STEEL BALL
C 5 - 29	LOOPER SLIDE BASE
C 5 - 30	WICK
C 5 - 31	LOOPER LEFT-RIGHT MOVING SET



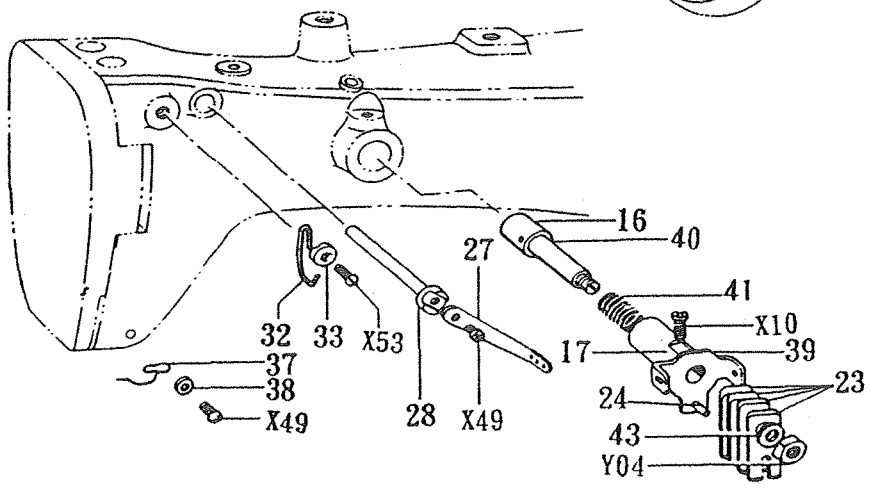
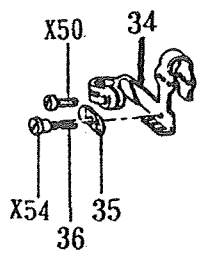
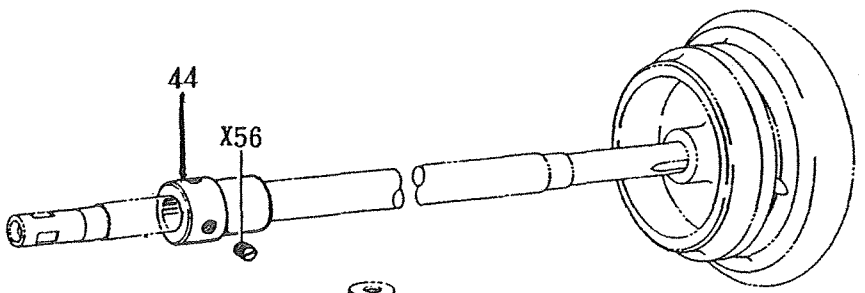
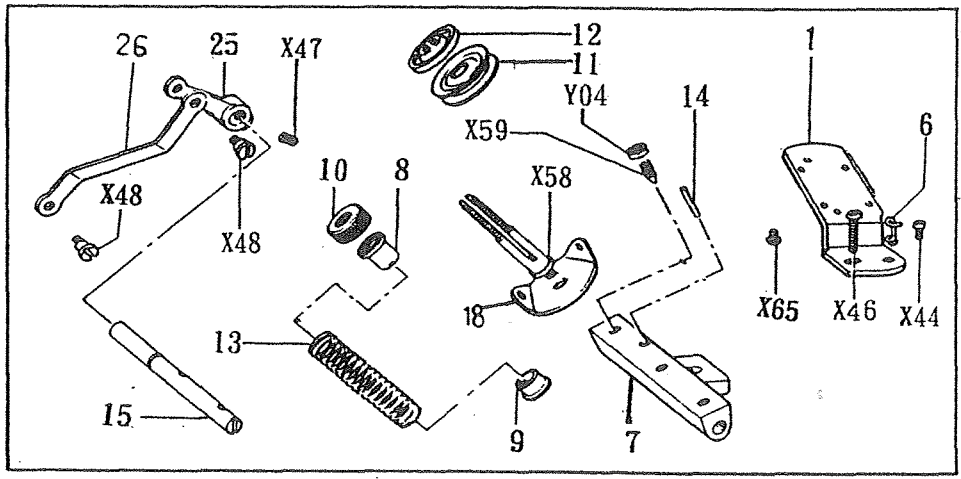
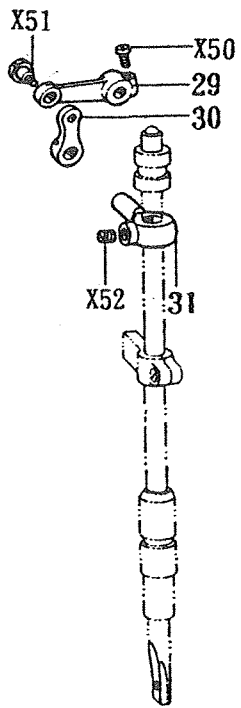
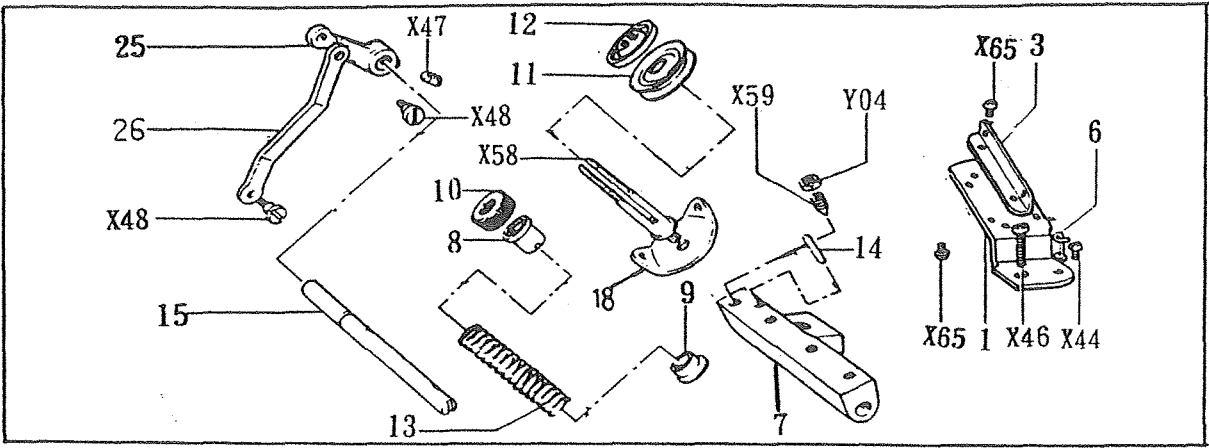
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C5 - 32	-----
C5 - 33	-----
C5 - 702	SQUARE BALL
C5 - X8	SCREW 437*7
C5 - X9	SCREW 5.95
C5 - X28	SCREW 4.37
C5 - X31	SCREW 3.57
C5 - X32	SCREW 4.37
C5 - X33	SCREW 4.37*10
C5 - X34	SCREW 4.76
C5 - X35	SCREW 2.38
C5 - X36	SCREW 3.57
C5 - X37	SCREW 4.37
C5 - X38	SCREW 4.37
C5 - X39	SCREW 5.95
C5 - X42	SCREW 12.70
C5 - X50	SCREW 357*5
C5 - Y03	NUT 5.95



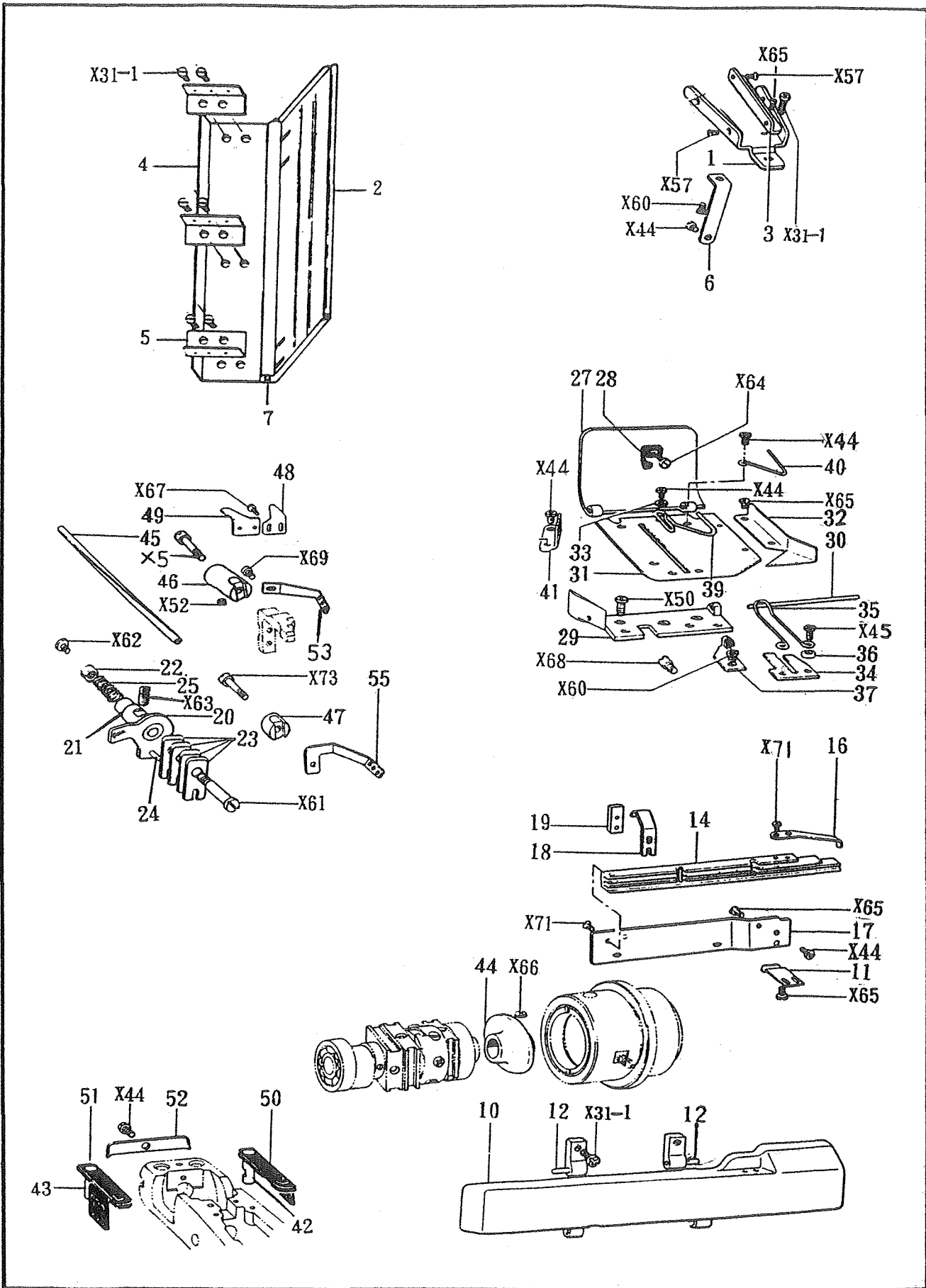
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 6 - 1	UPPER THREAD GUIDE RETAINER
C 6 - 3	BRACKET
C 6 - 6	THREAD HANGER
C 6 - 7	LINE GUIDE DEVICE
C 6 - 8	TENSION SPRING WASHER
C 6 - 9	TENDION SPRING WASHER
C 6 - 10	UPPER THREAD TENSION ADJUSTING NUT
C 6 - 11	TENSION DISC
C 6 - 12	TENSION DISC PRESSER
C 6 - 13	UPPER THREAD TENSION SPRING
C 6 - 14	UPPER THREAD RELEASE PIN
C 6 - 15	THREAD RELEASER SHAFT
C 6 - 16	-----
C 6 - 17	-----
C 6 - 18	UPPER THREAD TENSION SUTD SCREW
C 6 - 23	LOWER THREAD TENSION PLATE
C 6 - 24	PIN
C 6 - 25	TENSION RELEASE CRANK
C 6 - 26	TENSION RELEASE CONNECTING BAR
C 6 - 27	THREAD RELEASER LEVER
C 6 - 28	THREAD RELEASER LEVER SHAFT
C 6 - 29	TENSION RELEASE CONNECTING ROD
C 6 - 30	TENSION RELEASE LINK
C 6 - 31	TENSION RELEASE SUTD
C 6 - 32	THREAD GUIDE
C 6 - 33	WASHER
C 6 - 34	UPPER THREAD TAKE-UP LEEVER ASSEMBLY
C 6 - 35	THREAD CHECKER
C 6 - 36	SPRING
C 6 - 37	LOEWR THREAD GUIDE
C 6 - 38	WASHER



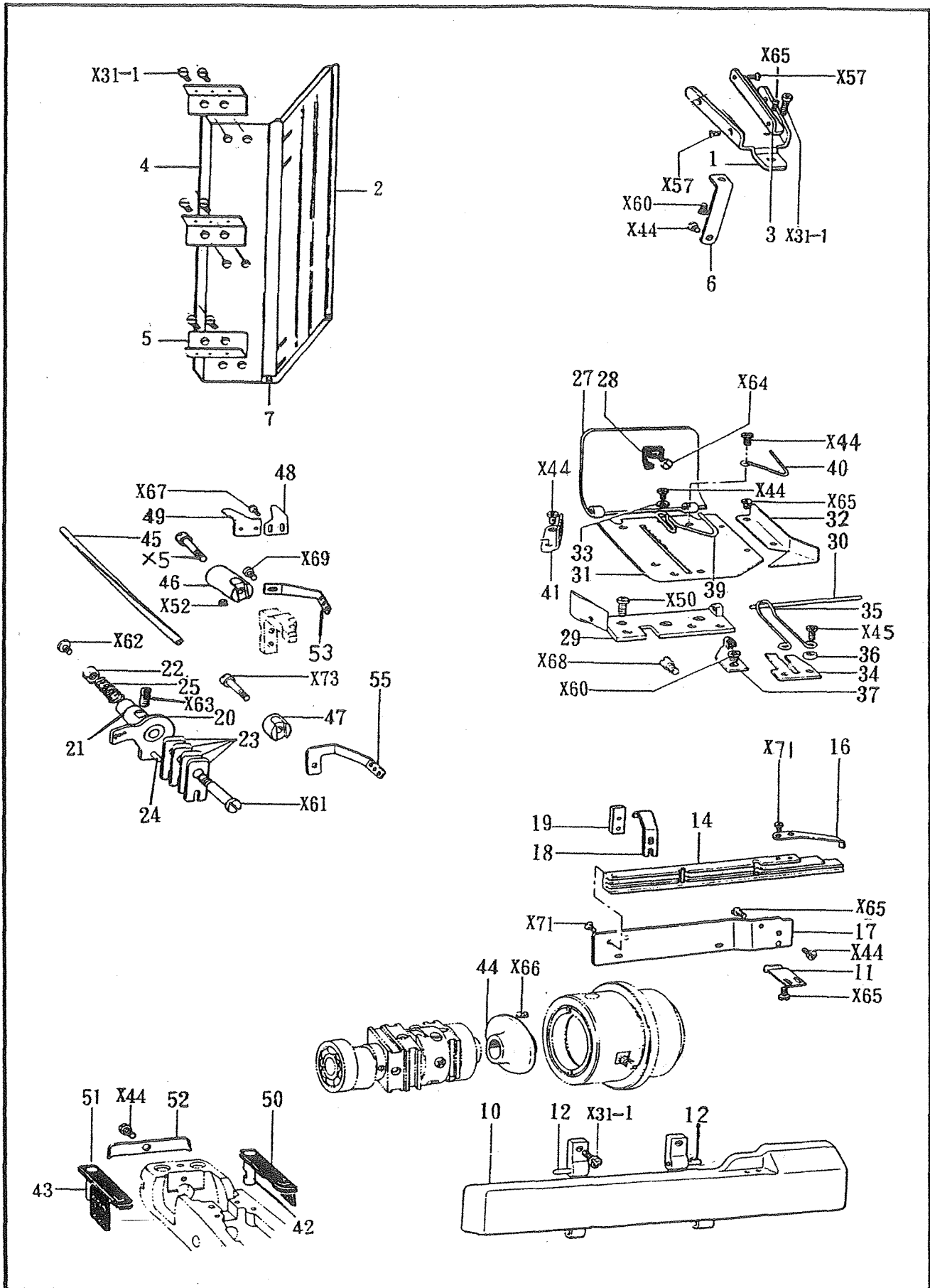
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 6 - 3 9	UPPER THREAD TENSION REGULATOR ASSEMBLY
C 6 - 4 0	UPPER THREAD TENSION SUTD ASSEMBLY
C 6 - 4 1	UPPER THREAD TENSION SPRING
C 6 - 4 3	WASHER
C 6 - 4 4	UPPER THREAD FASTENING CAM WITH SCREW
C 6 - X 1 0	SCREW 5.95
C 6 - X 4 4	SCREW 357*5
C 6 - X 4 6	SCREW 476*20
C 6 - X 4 7	SCREW 4.37
C 6 - X 4 8	SCREW 3,57
C 6 - X 4 9	SCREW 3.57*6
C 6 - X 5 0	SCREW 3.57
C 6 - X 5 1	SCREW 4.76
C 6 - X 5 2	SCREW 5.95*6
C 6 - X 5 3	SCREW 3.57
C 6 - X 5 4	SCREW 2.38
C 6 - X 5 6	SCREW 5.95
C 6 - X 5 8	UPPER THREAD TENSION STUD SCREW
C 6 - X 5 9	SCREW 4.37
C 6 - X 6 5	SCREW 238*4
C 6 - Y 0 4	NUT 4.37



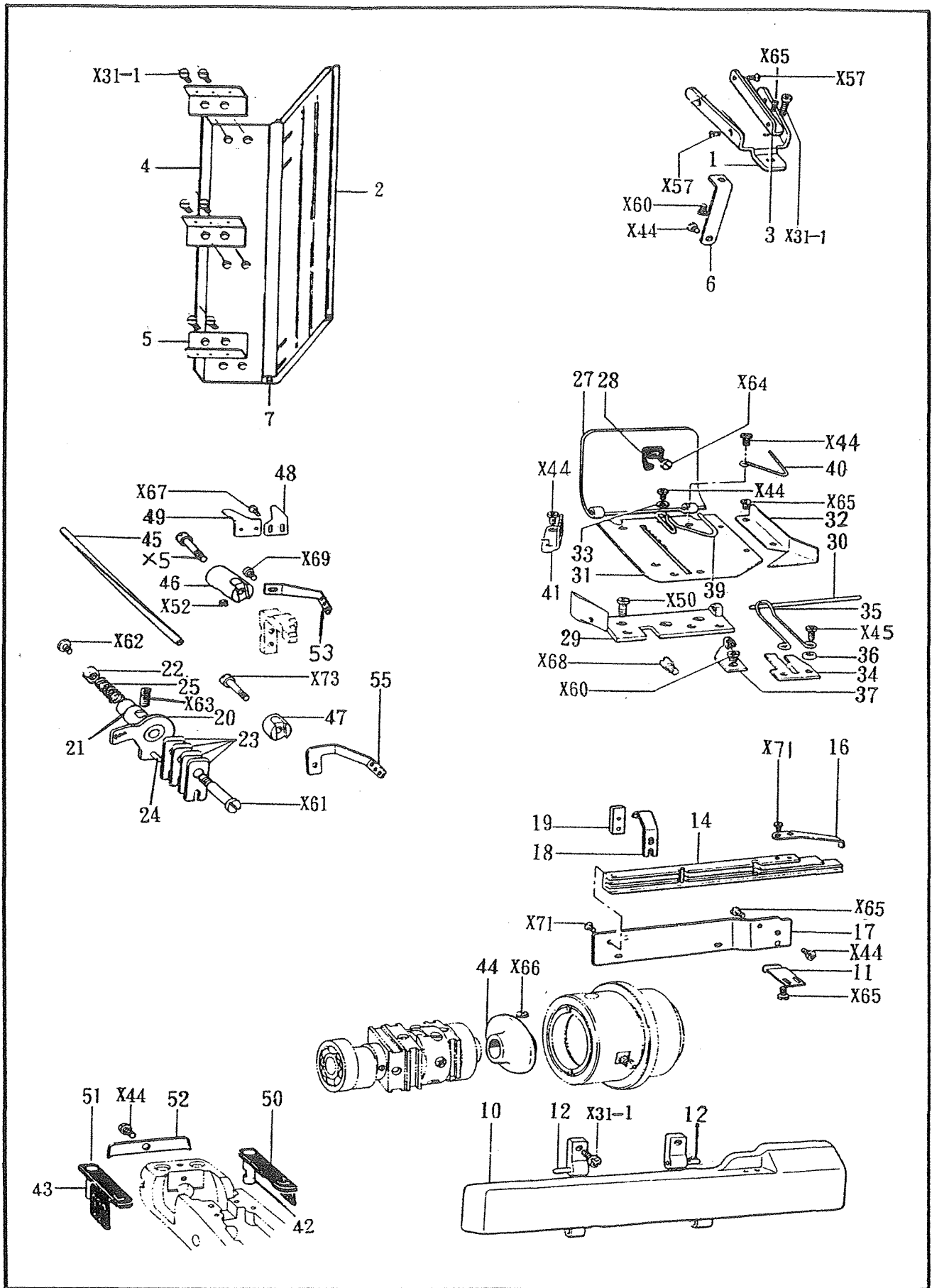
SPARE PARTS CATALOG

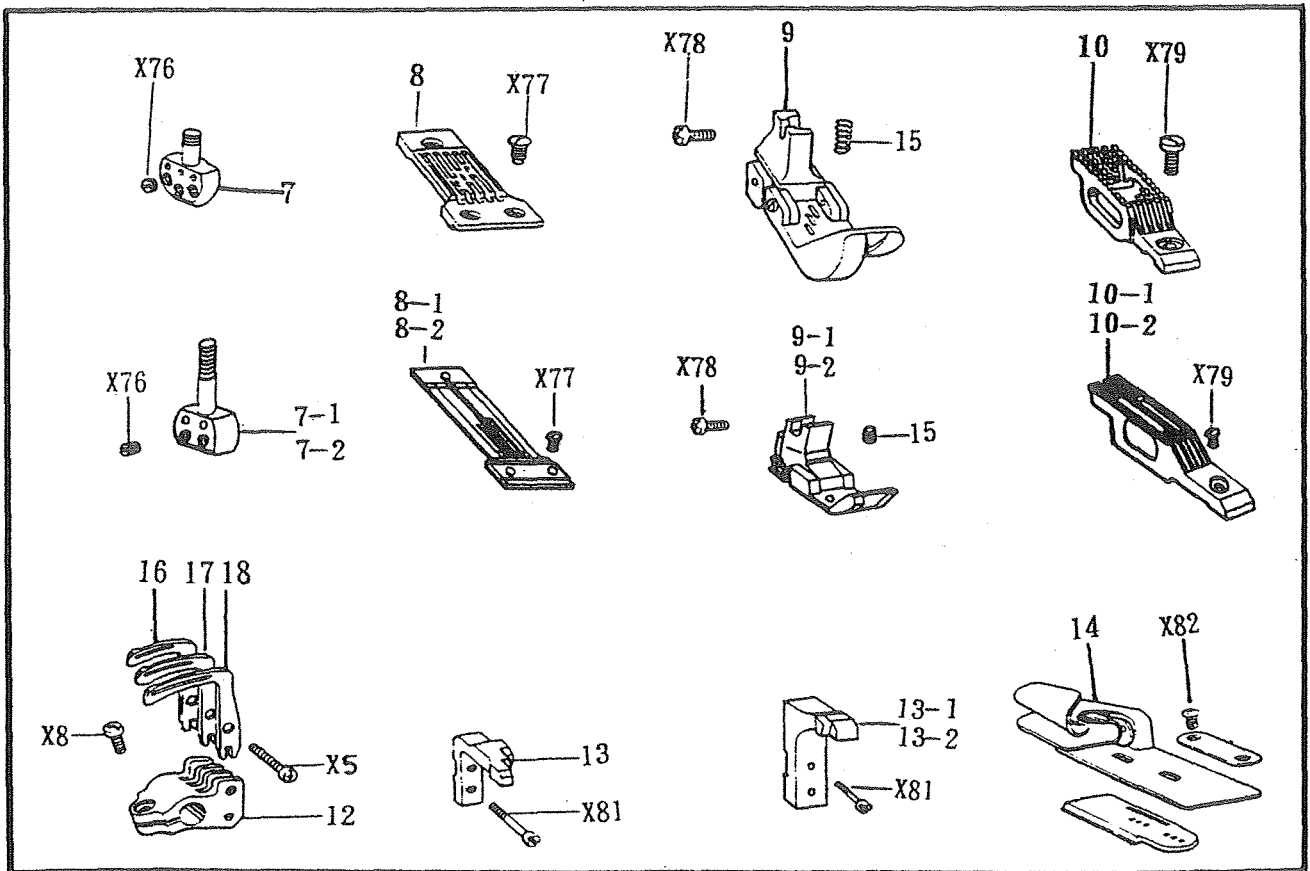
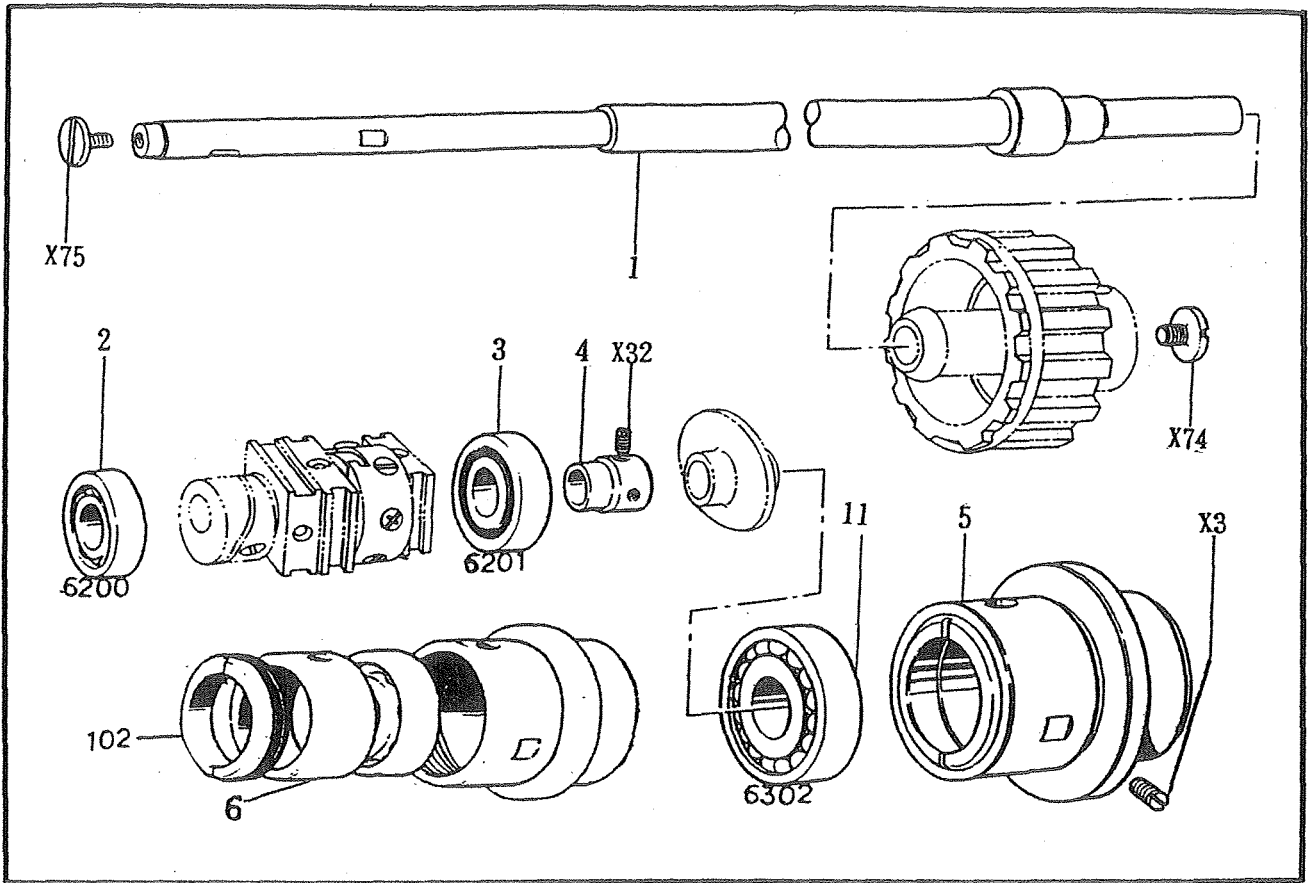
REF .NO.	NAME OF PARTS
C 7 - 1	LOWER THREAD GUIDE RETAINER
C 7 - 2	UPPER COVER
C 7 - 3	BRACKET
C 7 - 4	MACHINE REST BOARD
C 7 - 5	FIXING SEAT
C 7 - 6	LOWER THREAD GUIDE SUPPORTER
C 7 - 7	FIXING PIN
C 7 - 10	LOWER THREAD COVER
C 7 - 11	PLATE SPRING
C 7 - 12	LOWER THREAD GUIDE HINGE ASSEMBLY (L)
C 7 - 13	LOWER THREAD GUIDE HINGE ASSEMBLY (R)
C 7 - 14	LOOPER CONNECTOR GUIDE PLATE
C 7 - 16	THREAD KEEPER
C 7 - 17	HORIZONTAL THREAD GUIDE PLATE
C 7 - 18	HORIZONTAL TUBULAR GUIDE PLATE SPRING
C 7 - 19	POSITON PLATE
C 7 - 20	LOWER THREAD TENSION BRACKET
C 7 - 21	LOWER THREAD
C 7 - 22	LOWER THREAD TENSION NUT ASSEMBLY
C 7 - 23	LOWER THREAD TENSION PLATE
C 7 - 24	PIN
C 7 - 25	LOWER THREAD TENSION SPRING
C 7 - 27	THREAD TAKE-UP LEVER COVER
C 7 - 28	SPRING
C 7 - 29	LOWER THREAD TAKE-UP LEVER FRAME
C 7 - 30	LOWER THREAD TAKE-UP LEVER COVER SHAFT
C 7 - 31	LOWER THREAD TAKE-UP LEVER BASE
C 7 - 32	GUIDE PLATE
C 7 - 33	WASHER
C 7 - 34	LOWER THREAD GUIDE PLATE
C 7 - 35	SCREW



SPARE PARTS CATALOG

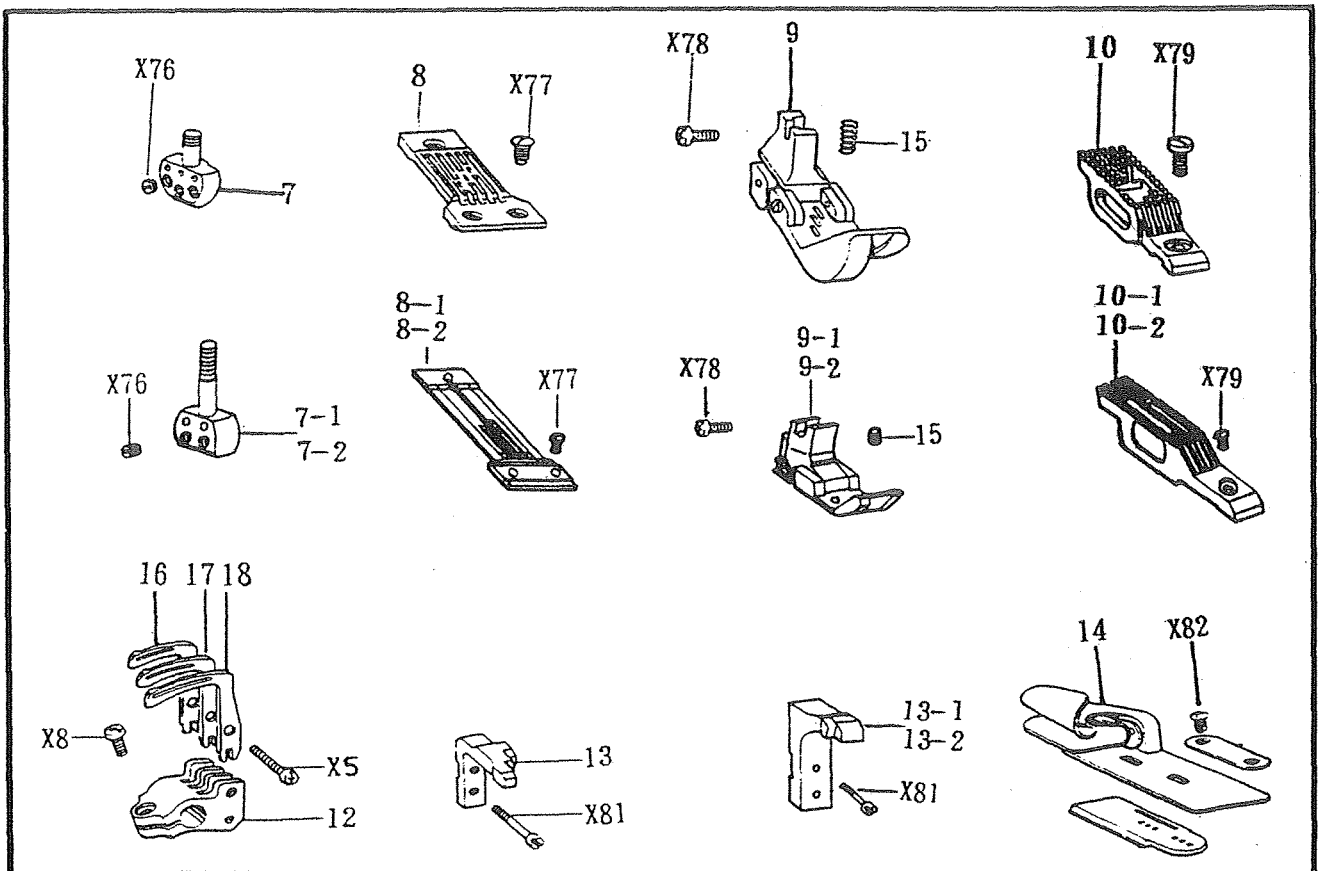
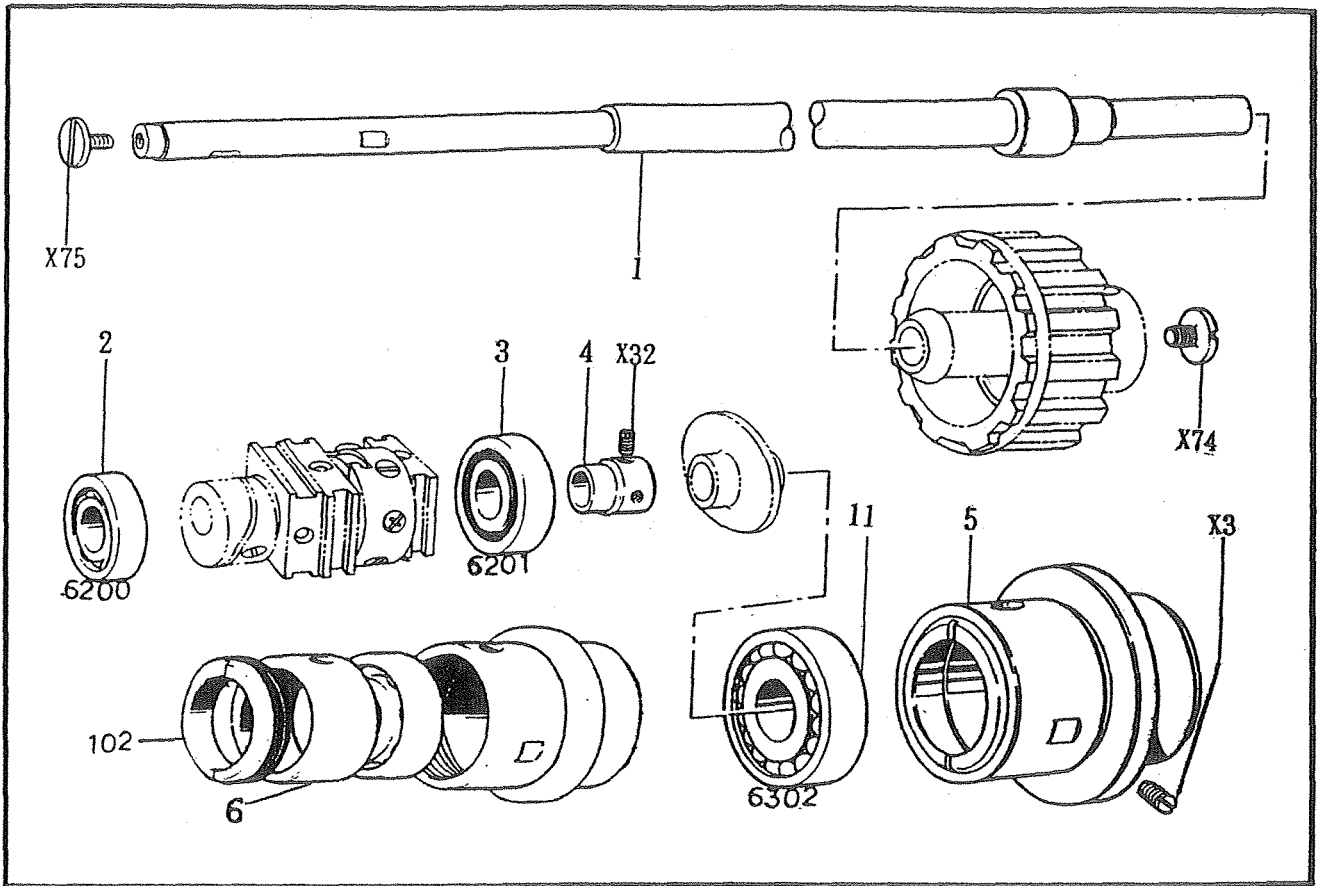
REF .NO.	NAME OF PARTS
C 7 - 3 6	WASHER
C 7 - 3 7	LOWER THREAD GUIDE (LEFT)
C 7 - 3 9	LOWER THREAD GUIDE (RIGHT)
C 7 - 4 0	LOWER THREAD GUIDE (LEFT)
C 7 - 4 1	LOWER THREAD GUIDE PLATE
C 7 - 4 2	PIN
C 7 - 4 3	PIN
C 7 - 4 4	LOWER THREAD TAKE-UP DISC ASSEMBLY
C 7 - 4 5	LOWER THREAD FEED TUBE
C 7 - 4 6	LOOPER THREAD GUIDE BRACKET
C 7 - 4 7	LOOPER THREAD GUIDE BRACKET
C 7 - 4 8	THREAD CUTTER GUIDE PLATE
C 7 - 4 9	THREAD CUTTER
C 7 - 5 0	LOOPER SIDE COVER (RIGHT)
C 7 - 5 1	LOOPER SIDE COVER (LEFT)
C 7 - 5 2	SPRING
C 7 - 5 3	LOOPER GUIDE
C 7 - 5 5	LOWER THREAD GUIDE
C 7 - X 5	SCREW 357*14
C7 - X31 - 1	SCREW 357*10
C 7 - X 4 4	SCREW 357*5
C 7 - X 4 5	SCREW 9/64*40
C 7 - X 5 0	SCREW 3.57
C 7 - X 5 2	SCREW 5.95*6
C 7 - X 5 7	SCREW 2.38
C 7 - X 6 0	SCREW 357*4
C 7 - X 6 1	LOWER THREAD TENSION ADJUSTING SCREW
C 7 - X 6 2	SCREW 357*6
C 7 - X 6 3	SCREW 5.95*16
C 7 - X 6 4	SCREW 2.38
C 7 - X 6 5	SCREW 238*4



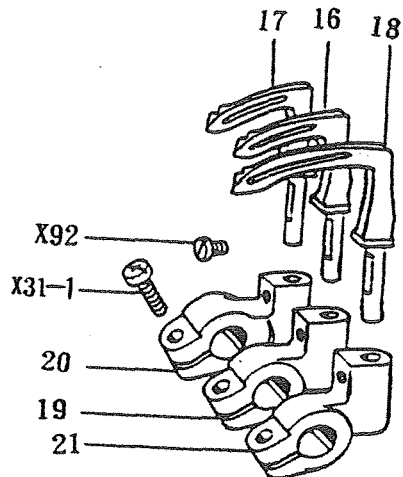
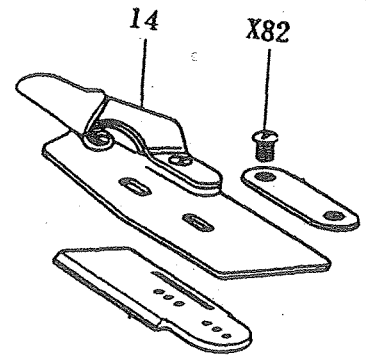
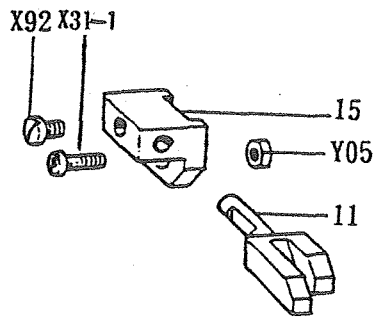
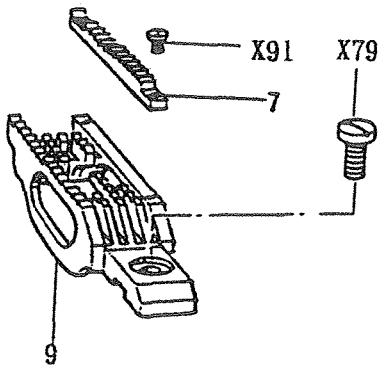
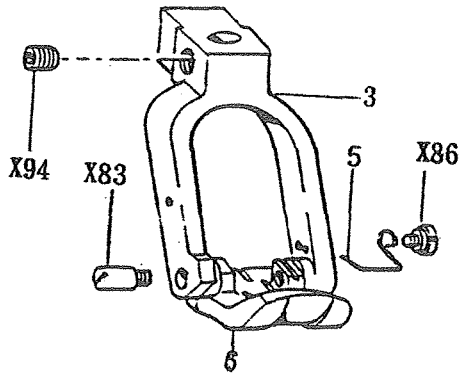
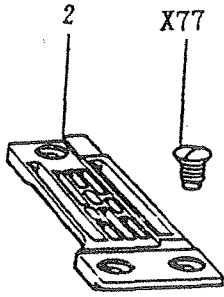
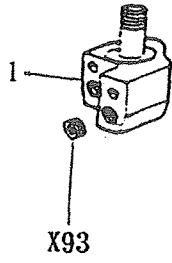


SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 8 - 1	LOVER SHAFT
C 8 - 2	BEARING 6200 Z
C 8 - 3	BEARING 6201 Z
C 8 - 4	BALL BEARING BUSHING
C 8 - 5	BEARING CASE ASSEMBLY
C 8 - 6	BEARING FIXING BUSHING
C 8 - 7	NEEDLE CLAMP WITH SCREW
C 8 - 7 - 1	NEEDLE CLAMP WITH SCREW 1/4
C 8 - 7 - 2	NEEDLE CLAMP WITH SCREW 3/16
C 8 - 8	NEEDLE PLATE
C 8 - 8 - 1	NEEDEL PLATE 1/4
C 8 - 8 - 2	NEEDEL PLATE 3/16
C 8 - 9	PRESSER FOOT ASSEMBLY
C 8 - 9 - 1	PRESSER FOOT ASSEMBLY 1/4
C 8 - 9 - 2	PRESSER FOOT ASSEMBLY 3/16
C 8 - 10	FEED DOG
C 8 - 10 - 1	FEED DOG 1/4
C 8 - 10 - 2	FEED DOG 3/16
C 8 - 11	BEARING 6302
C 8 - 12	LOOPER HOLDER ASSEMBLY
C 8 - 13	NEEDLE GUARD
C 8 - 13 - 1	NEEDLE GUARD 1/4
C 8 - 13 - 2	NEEDLE GUARD 3/16
C 8 - 14	LAPPER ASSEMBLY
C 8 - 16	LOOPER SHORT
C 8 - 17	LOOPER MEDIUM
C 8 - 18	LOOPER LONG
C 8 - 102	BEARING FIXING SCREW
C 8 - X3	SCREW 7.94
C 8 - X5	SCREW 357*16
C 8 - X8	SCREW 437*10



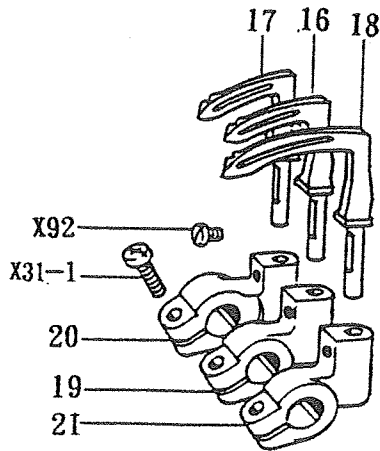
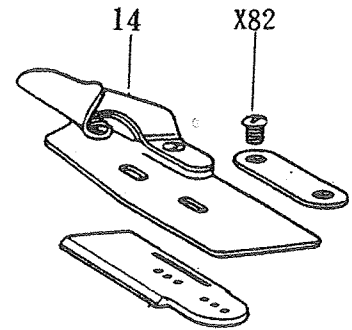
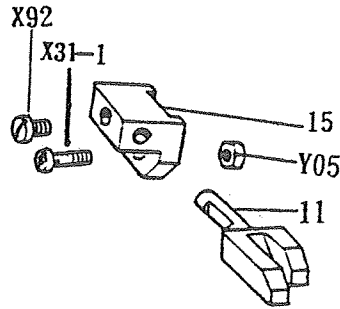
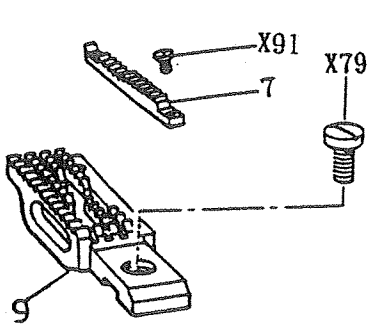
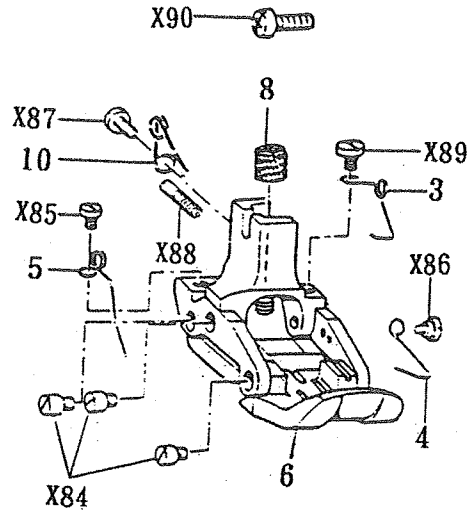
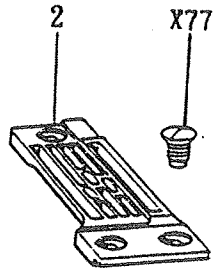
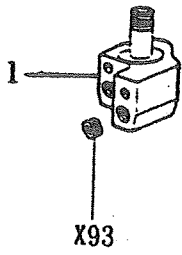
P



SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 9 - 1	NEEDLE CLAMP ASSEMBLY
C 9 - 2	NEEDLE PLATE
C 9 - 3	PRESSER FOOT ASSEMBLY
C 9 - 5	PRESSER FOOT (F) SPRING
C 9 - 6	PRESSER FOOT ASSEMBLY
C 9 - 7	SUB FEED DOG
C 9 - 9	FEED DOG
C 9 - 11	NEEDLE GUARD
C 9 - 14	LAPPER ASSEMBLY
C 9 - 15	NEEDLE GUARD BRACKET
C 9 - 16	LOOPER (SHORT)
C 9 - 17	LOOPER (MIDDLE)
C 9 - 18	LOOPER (LONG)
C 9 - 19	LOOPER HOLDER (SHORT)
C 9 - 20	LOOPER HOLDER (MIDDLE)
C 9 - 21	LOOPER HOLDER (LONG)
C 9 - X31 - 1	SCREW 357*10
C 9 - X 7 7	SCREW 4.37
C 9 - X 7 9	SCREW 4.76
C 9 - X 8 2	SCREW 3.57
C 9 - X 8 3	PIN
C 9 - X 8 6	SCREW 2.38
C 9 - X 9 1	SCREW 1.98
C 9 - X 9 2	SCREW 3.57
C 9 - X 9 3	SCREW 3.18
C 9 - X 9 4	SCREW 5.95
C 9 - Y 0 5	NUT 3.57

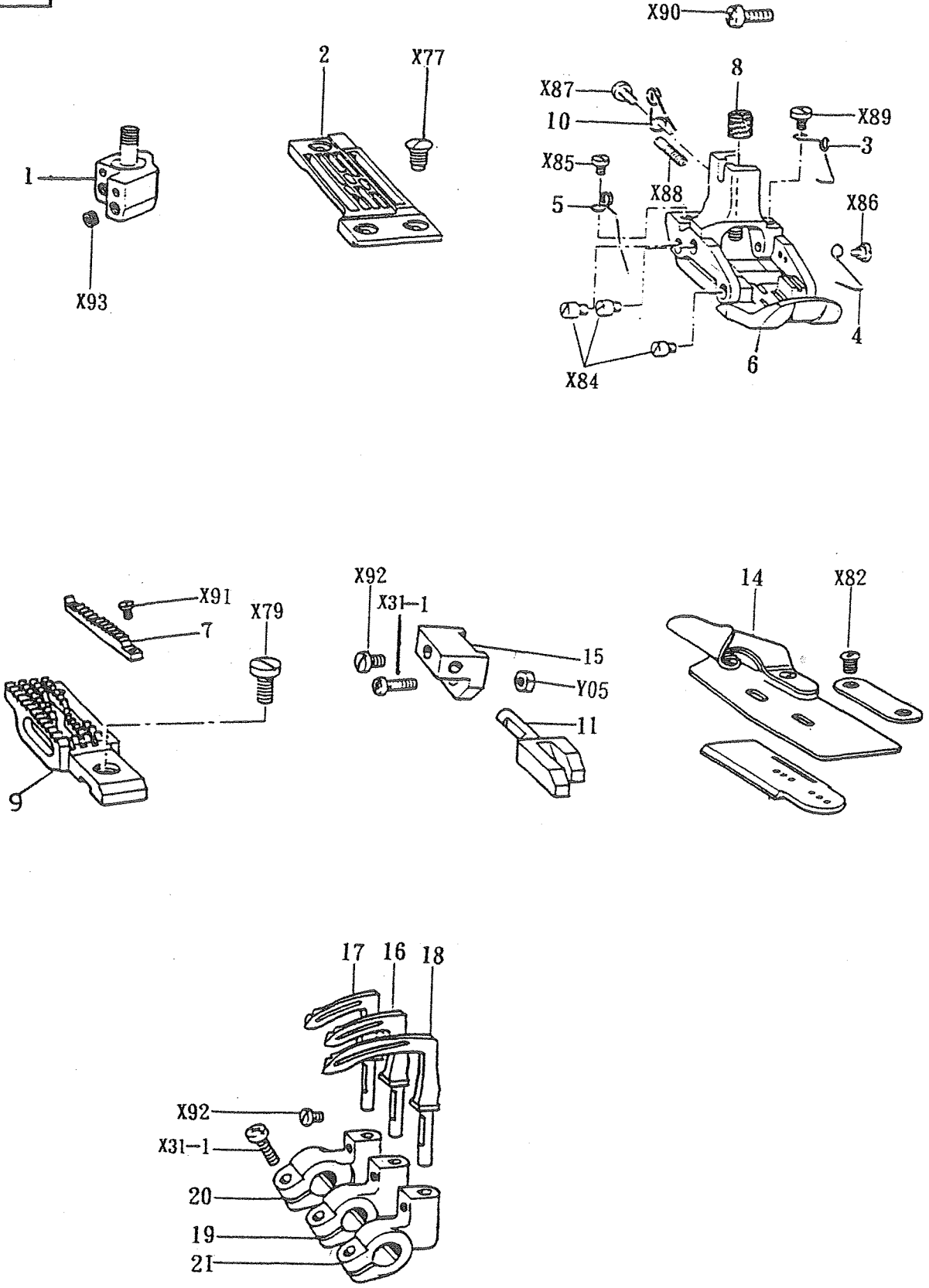
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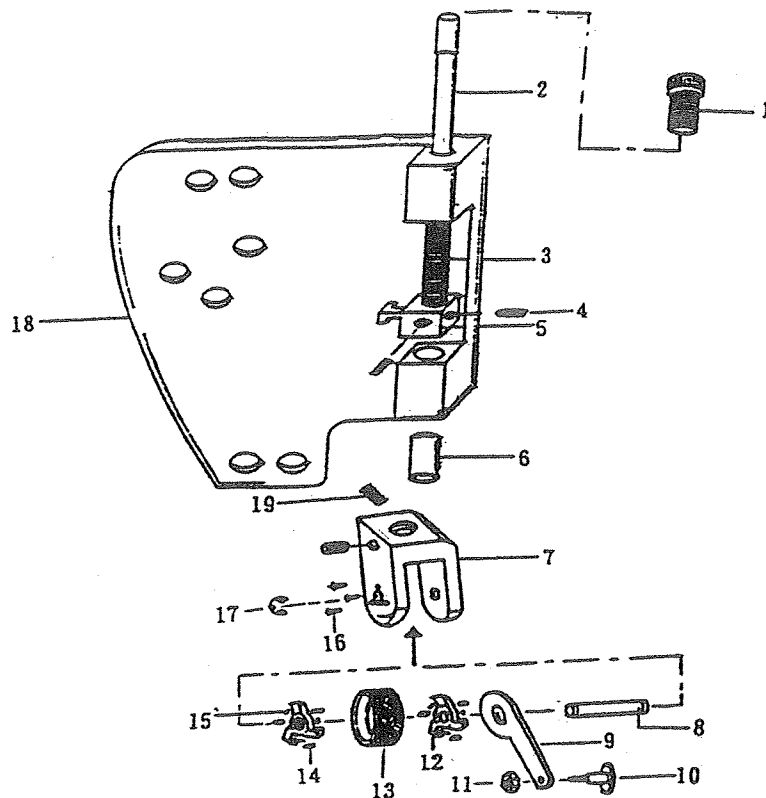
SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 1 0 - 1	NEEDLE CLAMP ASSEMBLY
C 1 0 - 2	NEEDLE PLATE
C 1 0 - 3	SPRING M
C 1 0 - 4	SPRING F
C 1 0 - 5	SPRING BL
C 1 0 - 6	PRESSER FOOT ASSEMBLY
C 1 0 - 7	SUB FEED DOG
C 1 0 - 8	NUT 3.18
C 1 0 - 9	FEED DOG
C 1 0 - 10	SPRING BS
C 1 0 - 11	NEEDLE GUARD
C 1 0 - 14	LAPPER ASSEMBLY
C 1 0 - 15	NEEDLE GUARD BRACKET
C 1 0 - 16	LOOPER (SHORT)
C 1 0 - 17	LOOPER (MIDDLE)
C 1 0 - 18	LOOPER (LONG)
C 1 0 - 19	LOOPER HOLDER (SHORT)
C 1 0 - 20	LOOPER HOLDER (MIDDLE)
C 1 0 - 21	LOOPER HOLDER (LONG)
C10 - X31 - 1	SCREW 357*10
C 1 0 - X 7 7	SCREW 4.37
C 1 0 - X 7 9	SCREW 4.76
C 1 0 - X 8 2	SCREW 3.57
C 1 0 - X 8 4	STUD SCREW
C 1 0 - X 8 5	SCREW 2.38*3.5
C 1 0 - X 8 6	SCREW 2.38
C 1 0 - X 8 7	SCREW 318*5
C 1 0 - X 8 8	SCREW 3.18
C 1 0 - X 8 9	SCREW 2.38
C 1 0 - X 9 0	SCREW 3.57*8
C 1 0 - X 9 1	SCREW 1.98

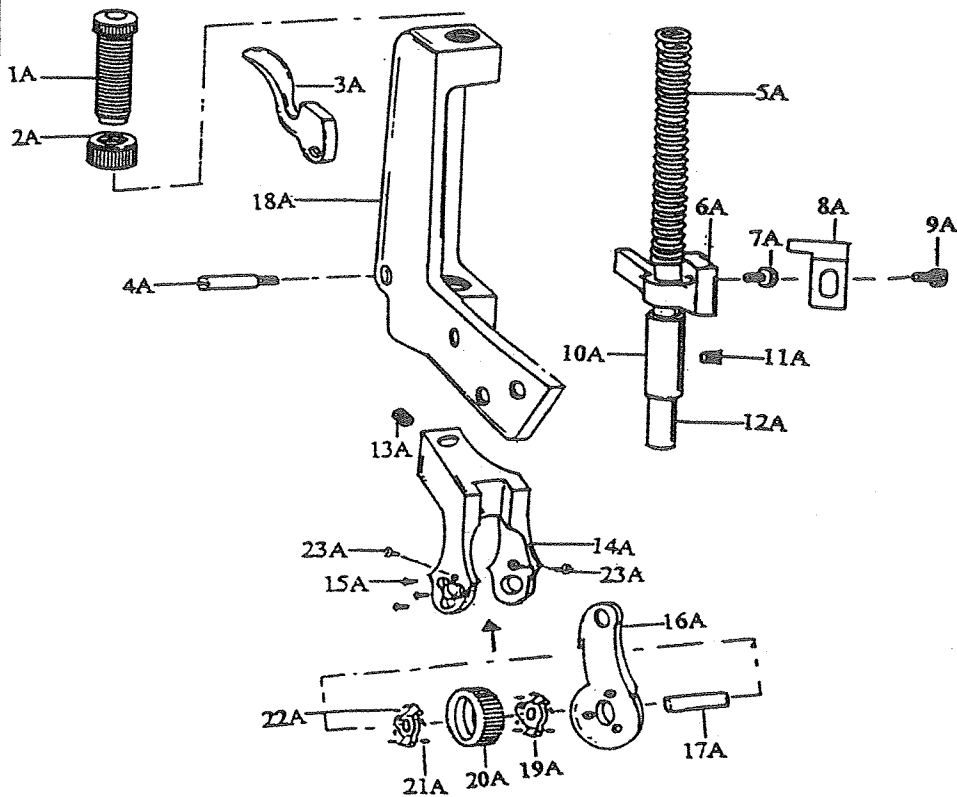
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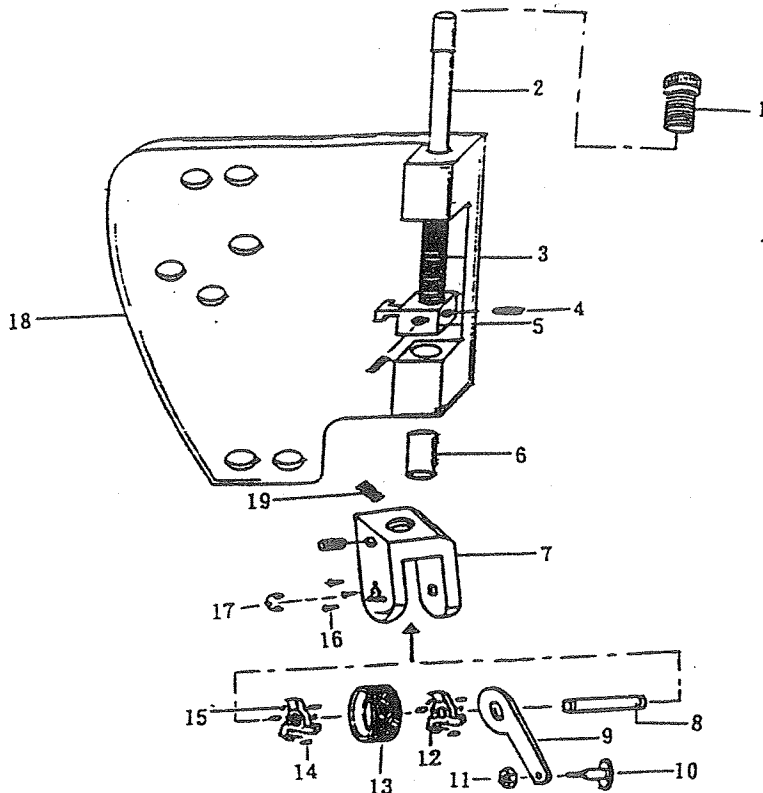
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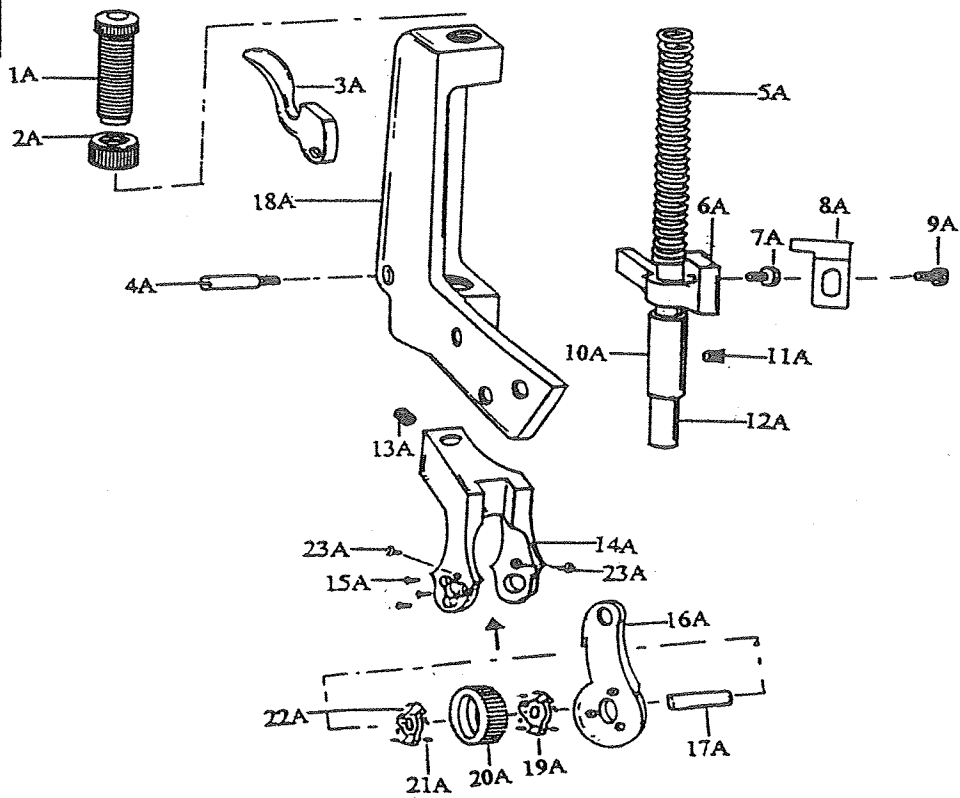
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DP



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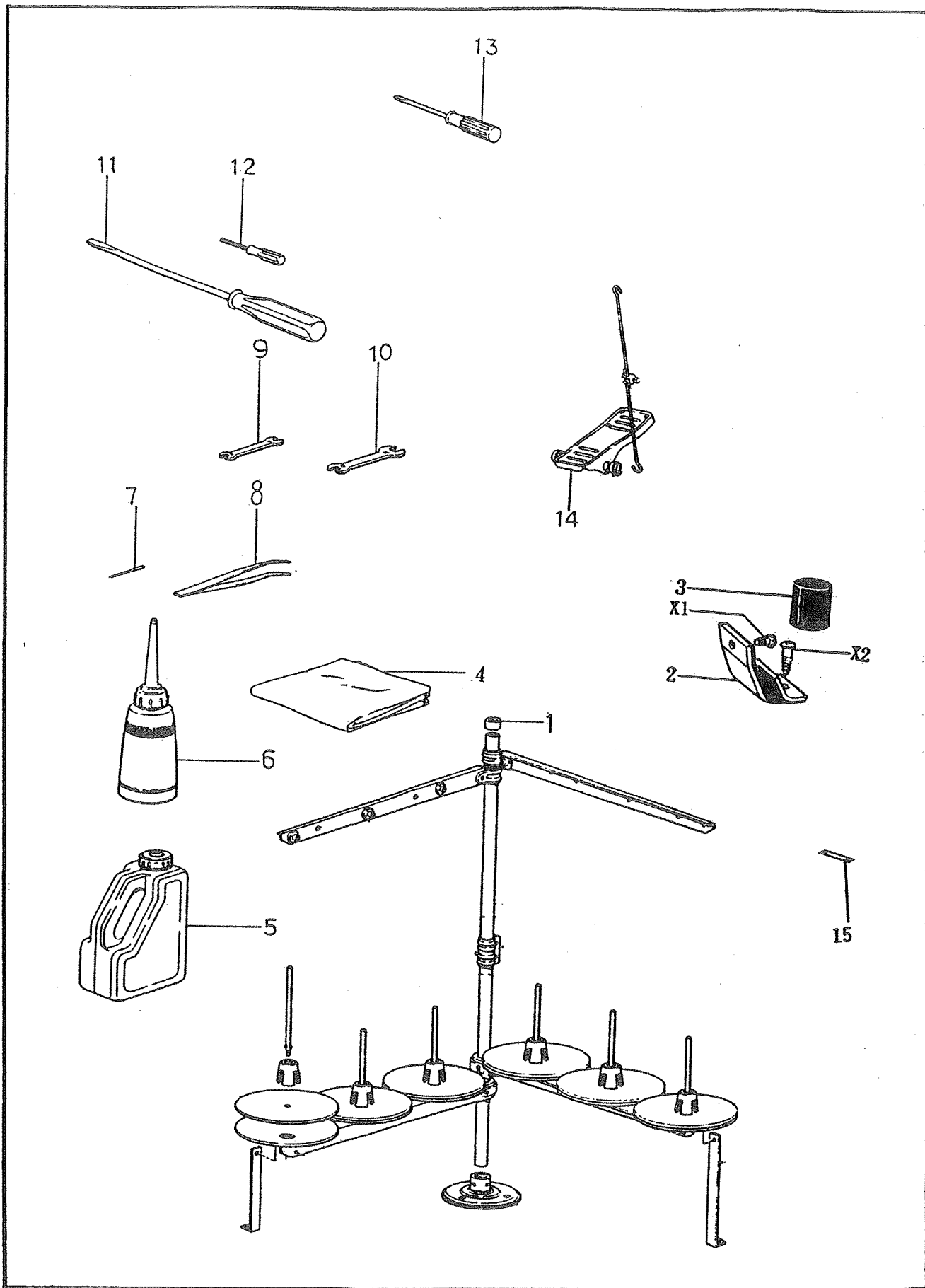


SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 1 1 - 1	PRESSURE ADJUSTING SCREW
C 1 1 - 2	UPPER WHEEL PRESSER BAR
C 1 1 - 3	SPRING
C 1 1 - 4	FIXING DEVICE SCREW
C 1 1 - 5	WHEEL DIRECTION FIXING DEVICE
C 1 1 - 6	PRESSER ROD BUSHING
C 1 1 - 7	UPPER WHEEL SEAT
C 1 1 - 8	UPPER WHEEL CONNECTON
C 1 1 - 9	ONE WAY PULL HOLDER
C 1 1 - 1 0	SCREW
C 1 1 - 1 1	NUT
C 1 1 - 1 2	ONE WAY TRIANGULAR WHEEL
C 1 1 - 1 3	UPPER WHEEL
C 1 1 - 1 4	ONE WAY STILL BALL
C 1 1 - 1 5	ONE WAY STILL SPRING
C 1 1 - 1 6	TRIANGULAR AXLE FIXING SCREW
C 1 1 - 1 7	CHOCK RING
C 1 1 - 1 8	FACE PLATE (UPPER)
C 1 1 - 1 9	SCREW
C 1 1 - 1 A	PRESSURE ADJUSTING SCREW
C 1 1 - 2 A	NUT
C 1 1 - 3 A	PRESSER FOOT LIFTER
C 1 1 - 4 A	STUD SCREW
C 1 1 - 5 A	SPRING
C 1 1 - 6 A	PRESSER BAR GUIDE ASSEMBLY
C 1 1 - 7 A	SCREW
C 1 1 - 8 A	ROLLER PRESSER BAR LIFTER
C 1 1 - 9 A	SCREW
C 1 1 - 1 0 A	PRESSER ROD BUSHING
C 1 1 - 1 1 A	SCREW
C 1 1 - 1 2 A	UPPER WHEEL PRESSER BAR

SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C11 - 13A	SCREW
C11 - 14A	PULLER SUPPORTER ASSEMBLY
C11 - 15A	SCREW
C11 - 16A	ONE WAY PULL HOLDER
C11 - 17A	UPPER WHEEL CONNECTON
C11 - 18A	FACE PLATE
C11 - 19A	ONE WAY TRIANGULAR WHEEL
C11 - 20A	UPPER WHEEL
C11 - 21A	ONE WAY STILL BALL
C11 - 22A	ONE WAY STILL SPRING
C11 - 23A	SCREW



SPARE PARTS CATALOG

REF .NO.	NAME OF PARTS
C 1 2 - 1	THREAD STAND
C 1 2 - 2	CUSHION ASSEMBLY
C 1 2 - 3	BASE CUSHION
C 1 2 - 4	HEAD COVER
C 1 2 - 5	OIL TANK
C 1 2 - 6	OILER ASSEMBLY
C 1 2 - 7	NEEDLE
C 1 2 - 8	TWEEZERS
C 1 2 - 9	SPANNER
C 1 2 - 1 0	SPANNER
C 1 2 - 1 1	SCREW DRIVER
C 1 2 - 1 2	SCREW DRIVER
C 1 2 - 1 3	SCREW DRIVER
C 1 2 - 1 4	THREADLE
C 1 2 - 1 5	SPACER < THREAD TRIMMER >
C 1 2 - X 1	SCREW 6.35
C 1 2 - X 2	SCREW 6.2*26
C 1 2 - X 2 2	SCREW 11.11
C 1 2 - X 2 3	SCREW 6.35

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