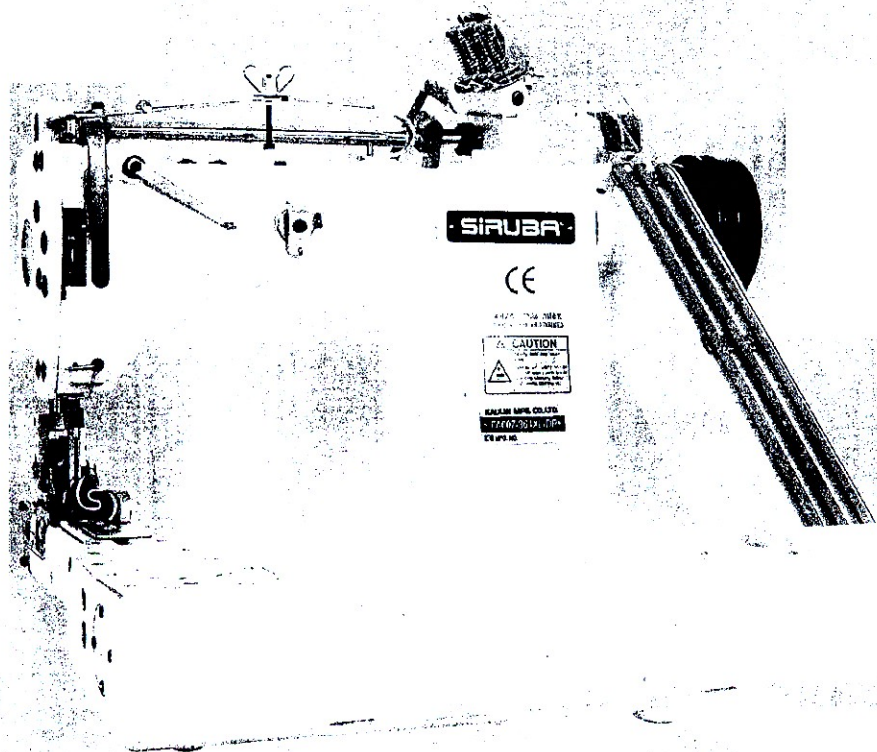


SIRUBA®
銀箭牌工業用縫紉機
INDUSTRIAL SEWING MACHINE

FA007

使用說明與零件圖
INSTRUCTION AND PARTS LIST

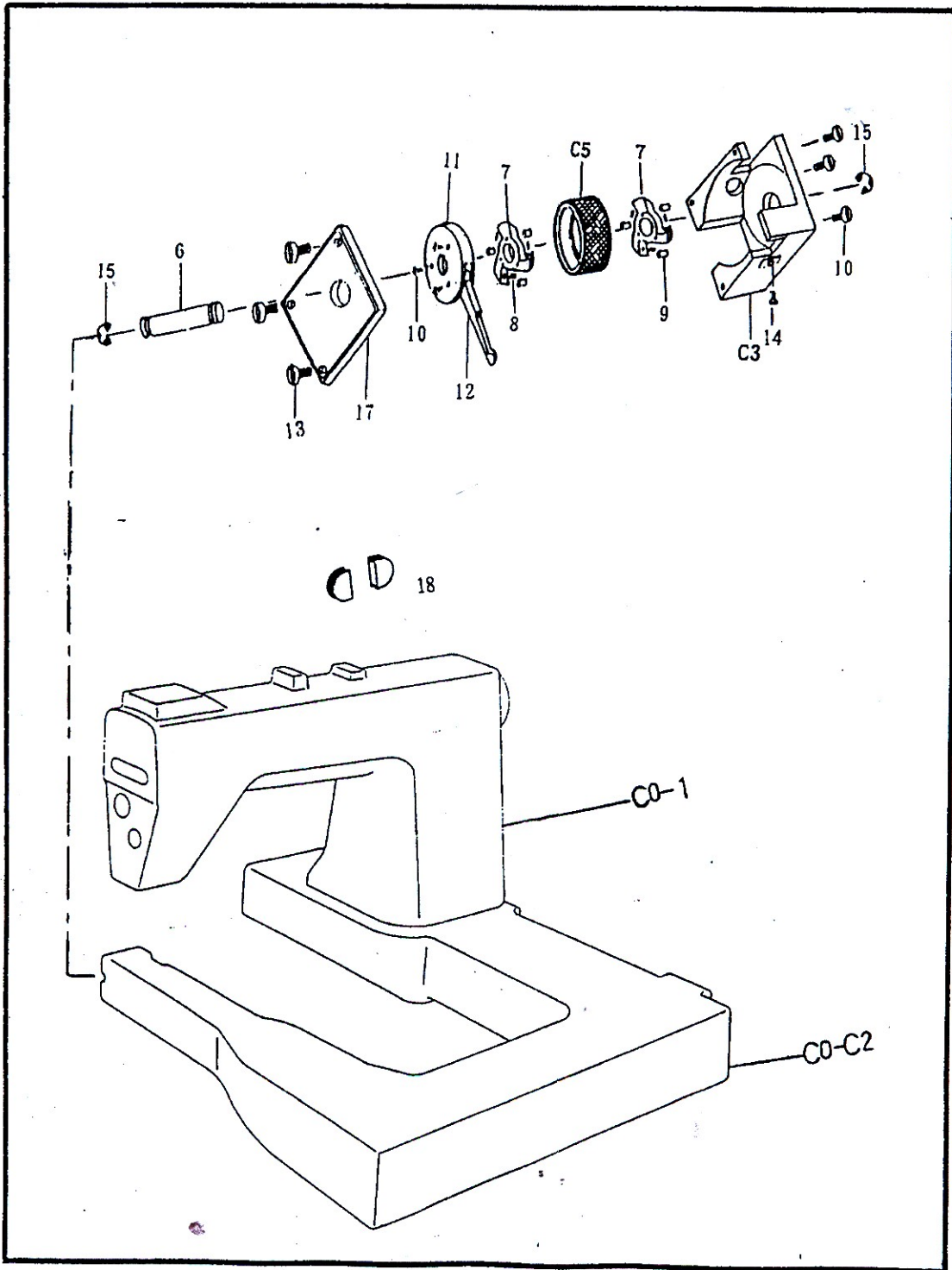


CE

 高林股份有限公司
KAULIN MFG. CO., LTD.

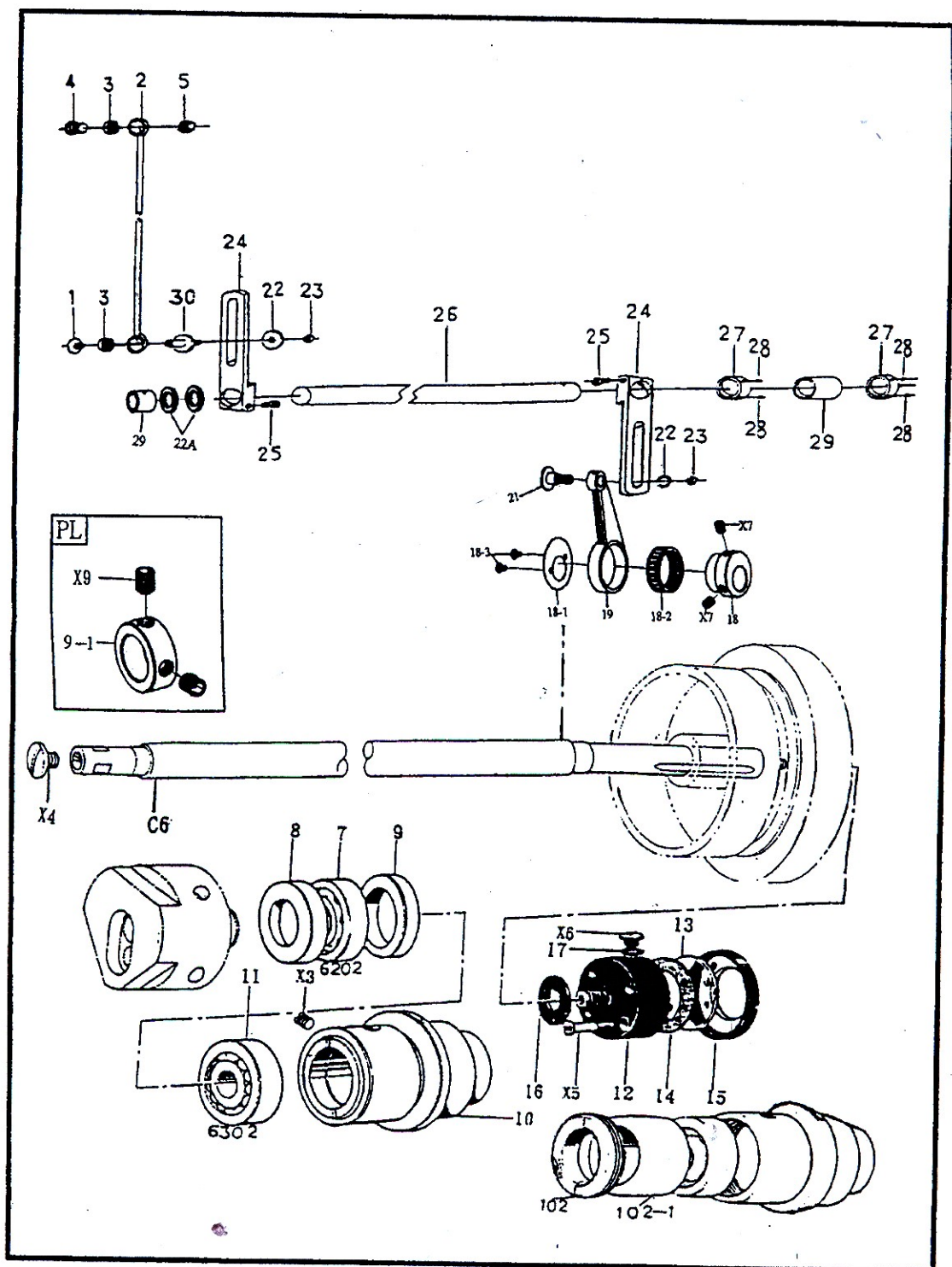
CONTENTS

- 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. C10- GAUGE PARTS(DP)**
- 11. C11- PULLER DEVICE MECHANISM**
- 12. C12- ACCESSORIES**

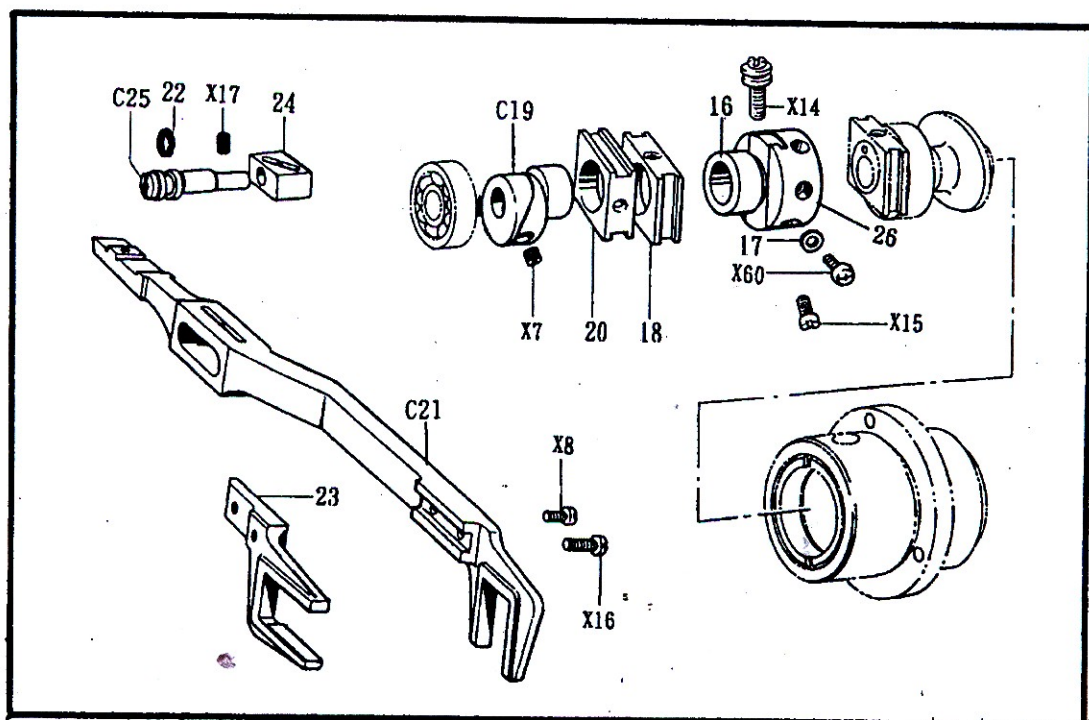
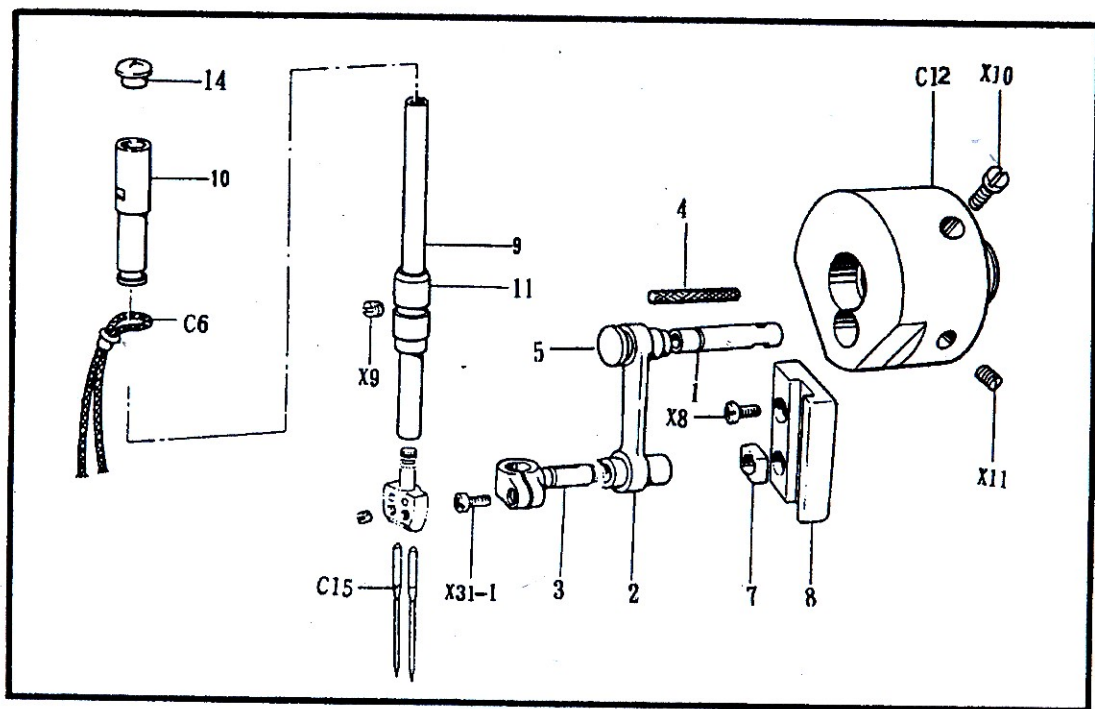


C 0

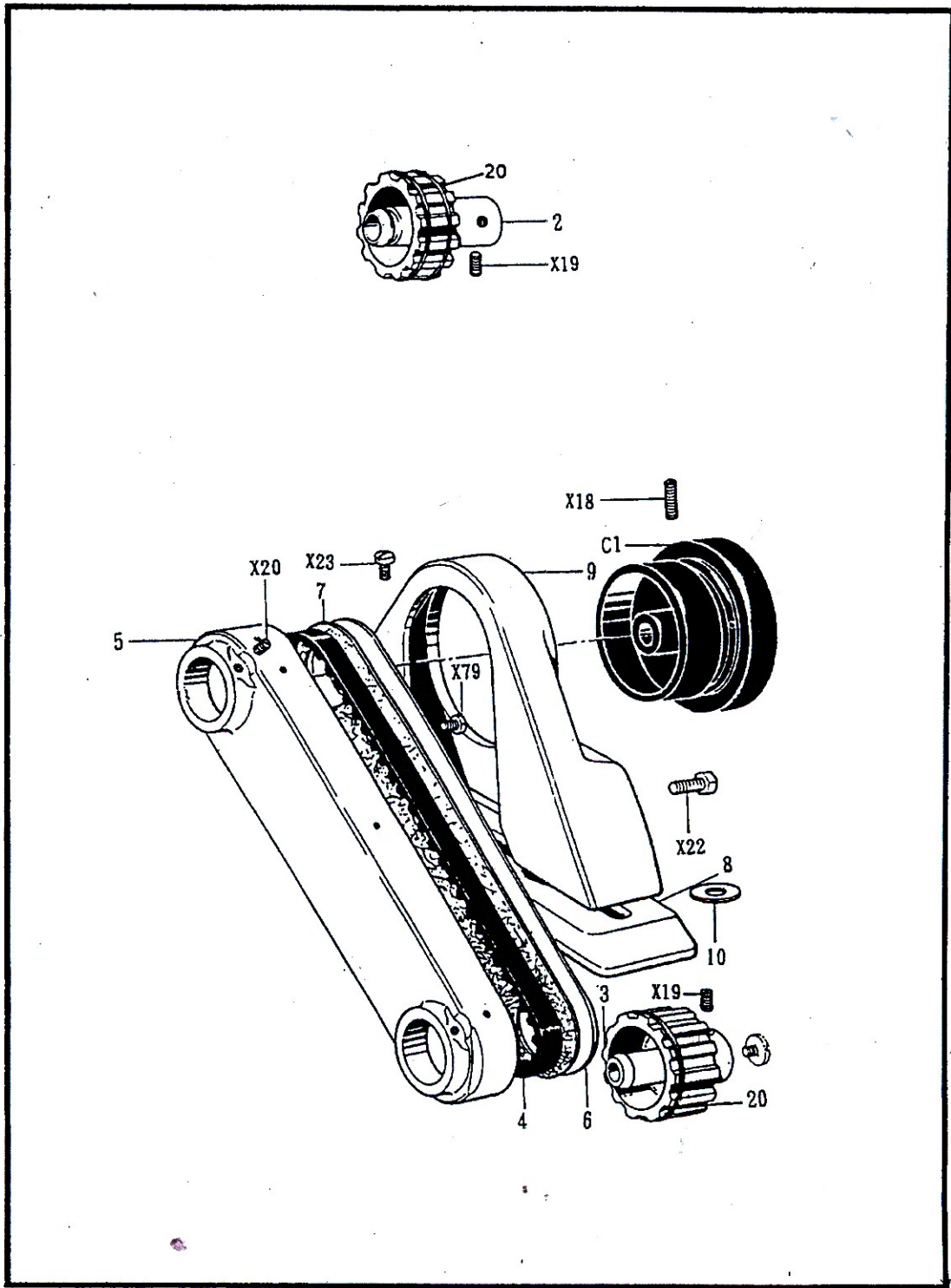
REF.NO.	NAME OF PARTS
C 0 - 1	MACHINE HEAD
C 0 - C 2	MACHINE REST BOARD
C 0 - C 3	LOWER WHEEL SEAT
C 0 - 4	OIL PLUG
C 0 - C 5	LOWER WHEEL
C 0 - 6	LOWER WHEEL CONNECTION
C 0 - 7	ONE WAY TRIANGULAR AXLE
C 0 - 8	ONE WAY STILL SPRING
C 0 - 9	ONE WAY STILL BALL
C 0 - 1 0	SCREW 238*6
C 0 - 1 1	ONE WAY PUSHING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



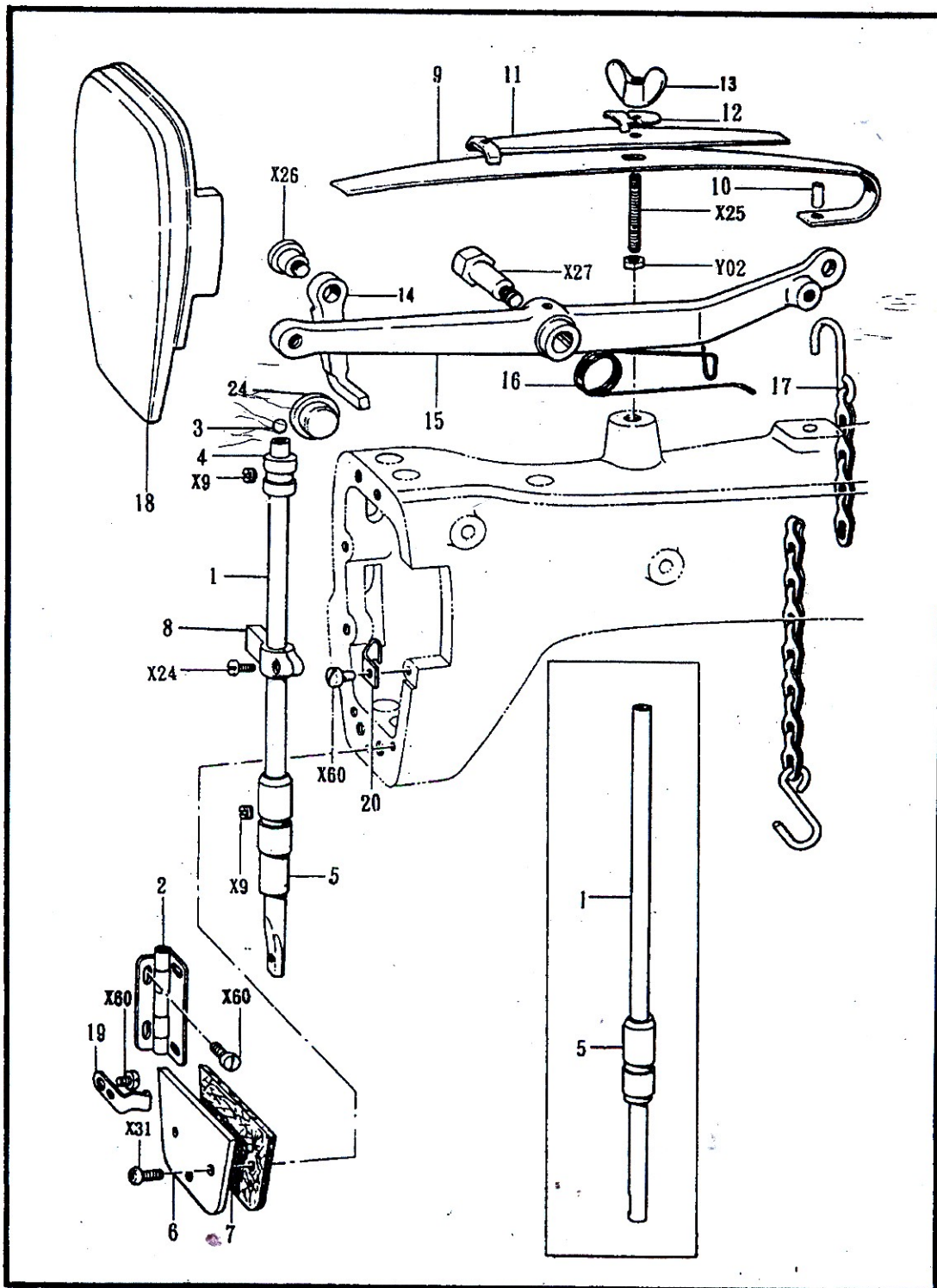
REF.NO.	NAME OF PARTS
C 1 - 1	PULL BAR ENDING SCREW
C 1 - 2	VERTICAL PULL BAR
C 1 - 3	PULL BAR BEARING
C 1 - 4	VERTICAL PULL BAR FIXING SCREW (LOWER)
C 1 - 5	PULL BAR SCREW NUT
C 1 - C 6	UPPER SHAFT
C 1 - 7	BALL BEARING 6202
C 1 - 8	BEARING SUPPORT
C 1 - 9	OIL STOPPER
C 1 - 9 - 1	CHOCK RING
C 1 - 10	BEARING CASE ASSY
C 1 - 11	BALL 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	O RING
C 1 - 18	UPPER WHEEL ECCENTRIC WHEEL
C 1 - 18 - 1	ECCENTRIC WHEEL WASHER
C 1 - 18 - 2	BEARING
C 1 - 18 - 3	SCREW 3.57
C 1 - 19	UPPER WHEEL MOVING PULL BAR ("8" TYPE)
C 1 - 21	PULL BAR SCREW
C 1 - 22	FIXING PULL BAR SCREW WASHER
C 1 - 22A	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
C 1 - 102 - 1	BEARING FIXING BUSHING
C 1 - X 3	SCREW M7.94
C 1 - X 4	SCREW M7.94
C 1 - X 5	SCREW M3.57
C 1 - X 6	CAP SCREW
C 1 - X 7	SCREW 6.35
C 1 - X 9	SCREW 5.95



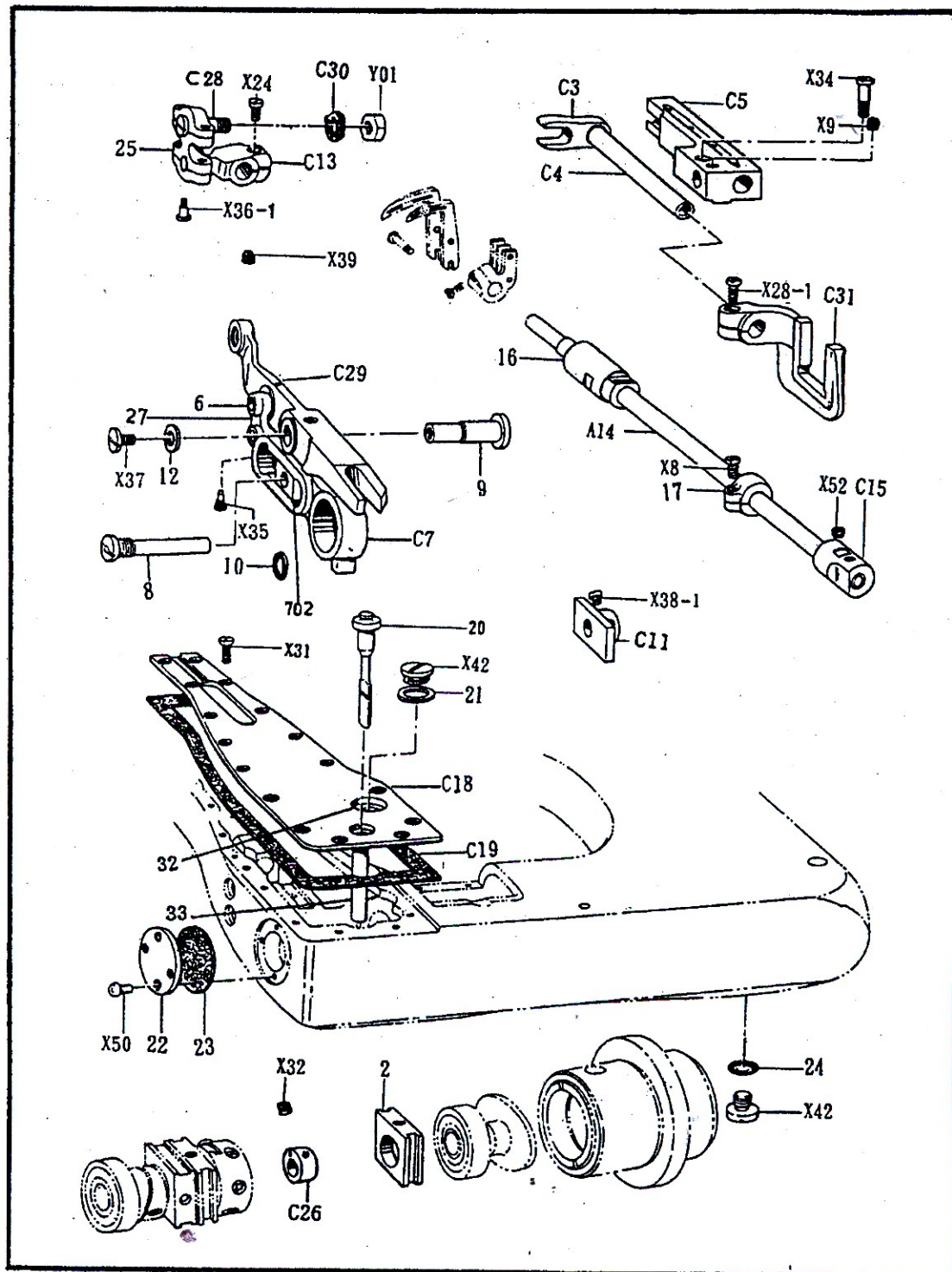
REF. NO.	NAME OF PARTS
C 2 - 1	NEEDLE BAR CRANK
C 2 - 2	NEEDLE BAR CRANK ROD
C 2 - 3	NEEDLE BAR CLAMP
C 2 - 4	WICK
C 2 - 5	OIL LEAK PROOF CAP
C 2 - C 6	WICK
C 2 - 7	NEEDLE BAR GUIDE SLIDE BLOCK
C 2 - 8	NEEDLE BAR GUIDE
C 2 - 9	NEEDLE BAR
C 2 - 1 0	NEEDLE BAR BUSH (U)
C 2 - 1 1	NEEDLE BAR BUSH (D)
C 2 - C 1 2	THREAD TAKE-UP CRANK
C 2 - 1 4	OIL CAP
C 2 - C 1 5	NEEDLE
C 2 - 1 6	FEED DOG ECCENTRIC AXLE
C 2 - 1 7	WASHER
C 2 - 1 8	ECCENTRIC WHEEL SLEEVE
C 2 - C 1 9	ECCENTRIC WHEEL WITH SCREW
C 2 - 2 0	ECCENTRIC WHEEL SLEEVE
C 2 - C 2 1	FEED BAR SLIDE BLOCK ASSEMBLY
C 2 - 2 2	O RING P6
C 2 - 2 3	FEED LIFTING FORK
C 2 - 2 4	FEED BAR SLIDE BLOCK
C 2 - C 2 5	FEED BAR ECCENTRIC SHAFT
C 2 - 2 6	FEED DOG ECCENTRIC SET
C 2 - X 7	SCREW M6.35
C 2 - X 8	SCREW M4.37-40*10
C 2 - X 9	SCREW M5.95
C 2 - X 1 0	SCREW M5.95
C 2 - X 1 1	SCREW M6.35
C 2 - X 1 4	FEED ECCENTRIC ADJUSTING SCREW
C 2 - X 1 5	SCREW M5.95
C 2 - X 1 6	SCREW M4.37-40*12
C 2 - X 1 7	SCREW M5.95
C 2 - X 3 1-1	SCREW M3.57
C 2 - X 6 0	SCREW M3.57-40*5



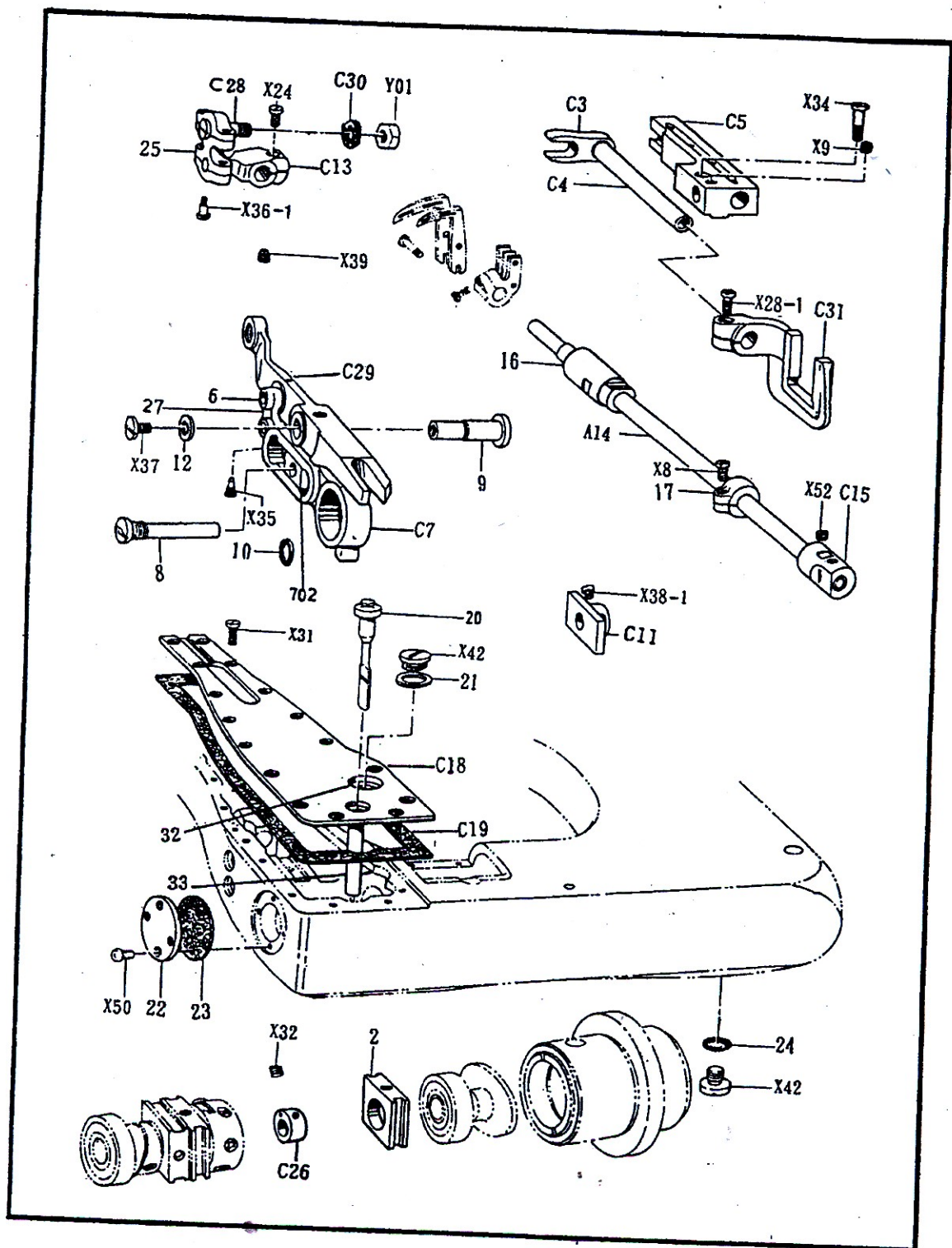
REF. NO.	NAME OF PARTS
C 3 - C 1	PULLEY
C 3 - 2	TIMING BELT WHEEL ASSEMBLY (UPPER)
C 3 - 3	TIMING BELT WHEEL ASSEMBLY (LOWER)
C 3 - 4	TIMING BELT
C 3 - 5	BELT COVER
C 3 - 6	BELT COVER PLATE
C 3 - 7	PACKING
C 3 - 8	PULLEY COVER BASE
C 3 - 9	PULLEY COVER
C 3 - 1 0	PULLEY COVER SEAT
C 3 - 2 0	SPRING COIL
C 3 - X 1 8	SCREW M5.95
C 3 - X 1 9	SCREW M6.35
C 3 - X 2 0	SCREW M6.35
C 3 - X 2 2	SCREW M11.11
C 3 - X 2 3	SCREW M6.35
C 3 - X 7 9	SCREW M4.76-32*8



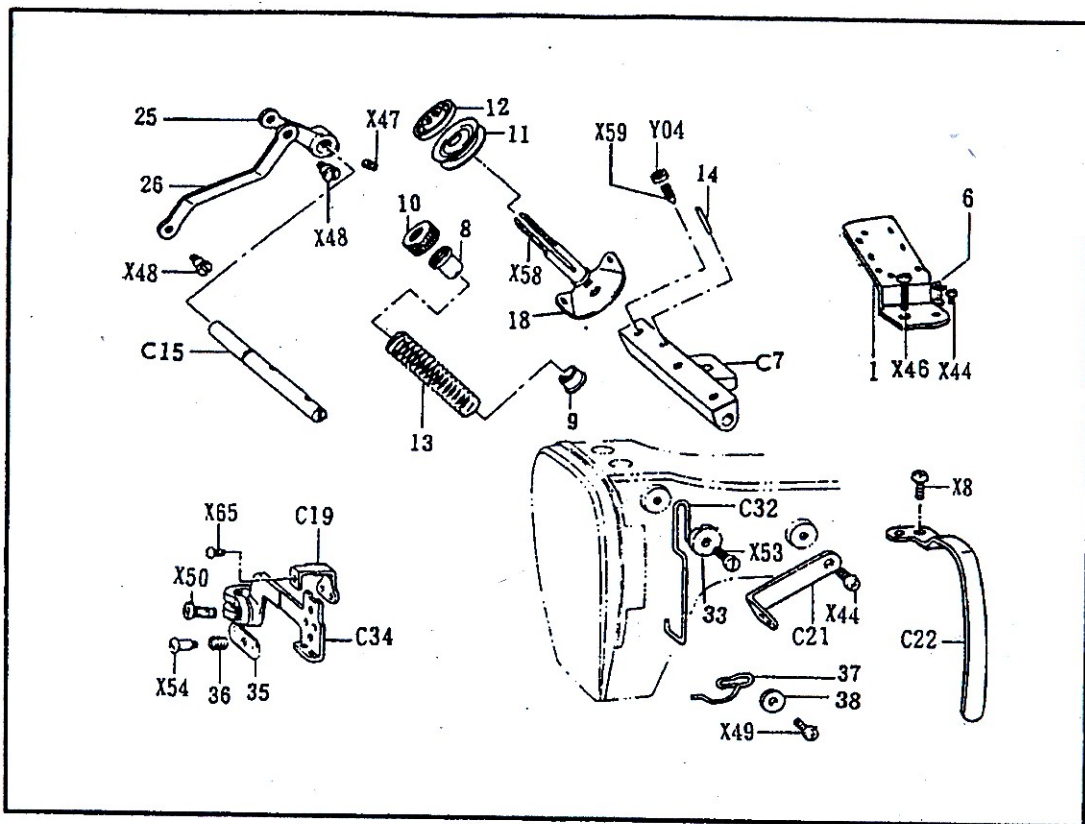
REF.NO.	NAME OF PARTS
C 4 - 1	PRESSER BAR
C 4 - 2	FACE PLATE UPPER HINGE ASSEMBLY
C 4 - 3	STEEL BALL
C 4 - 4	PRESSER BAR BUSHING (UPPER)
C 4 - 5	PRESSER BAR BUSHING (LOWER)
C 4 - 6	FACE PLATE (LOWER)
C 4 - 7	PACKING
C 4 - 8	PRESSER BAR CLAMP ASSEMBLY
C 4 - 9	PRESSER PLATE SPRING
C 4 - 1 0	PRESSER PLATE SPRING PIN
C 4 - 1 1	PRESSER PLATE SPRING ASSEMBLY
C 4 - 1 2	GUIDE WASHER
C 4 - 1 3	WING NUT
C 4 - 1 4	PRESSER BAR LIFTER
C 4 - 1 5	KNEE LIFTER LEVER
C 4 - 1 6	KNEE LIFTER SPRING
C 4 - 1 7	PRESSER FOOT LIFTER CHAIN ASSEMBLY
C 4 - 1 8	FACE PLATE (UPPER)
C 4 - 1 9	STOPPER SPRING PLATE (L)
C 4 - 2 0	STOPPER SPRING PLATE (S)
C 4 - 2 4	OIL CAP
C 4 - X 9	SCREW M5.95
C 4 - X 2 4	SCREW M4.37
C 4 - X 2 5	PRESSER ADJUSTING SCREW
C 4 - X 2 6	STUD SCREW M5.95
C 4 - X 2 7	STUD SCREW M7.94
C 4 - X 3 1	SCREW M3.57-40*10
C 4 - X 6 0	SCREW M3.57
C 4 - Y 0 2	NUT M4.76



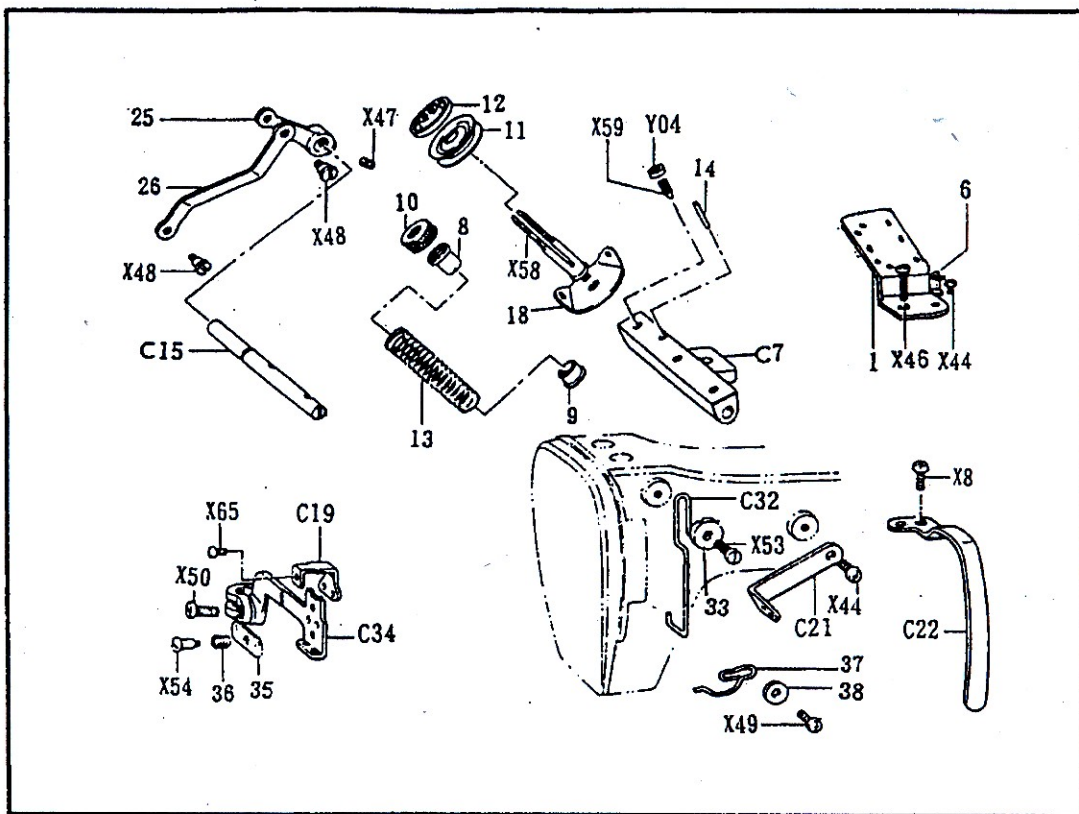
REF.NO.	NAME OF PARTS
C 5 - 2	ECCENTRIC WHEEL SLEEVE
C 5 - C 3	LOOPER FEEDING FORK
C 5 - C 4	LOOPER FEEDING FORK SHAFT
C 5 - C 5	LOOPER FEEDING FORK SHAFT BRACKET
C 5 - 6	PIN
C 5 - C 7	LOOPER FRONT-REAR TRANSMISSION
C 5 - 8	SLIDE BLOCK SHAFT
C 5 - 9	LOOPER LEVER SHAFT
C 5 - 1 0	PACKING
C 5 - C 1 1	CONNECTING ROD GUIDE PLATE
C 5 - 1 2	WASHER
C 5 - C 1 3	LOOPER SHAFT CLAMP
C 5 - A 1 4	LOOPER SHAFT
C 5 - C 1 5	LOOPER SHAFT BUSH (F)
C 5 - 1 6	LOOPER SHAFT BUSH (B)
C 5 - 1 7	SET COLLAR
C 5 - C 1 8	FORWARD ARM COVER ASSY
C 5 - C 1 9	PACKING
C 5 - 2 0	OIL GAUGE
C 5 - 2 1	PACKING
C 5 - 2 2	BALL BEARING CAP
C 5 - 2 3	PACKING
C 5 - 2 4	O RING P7
C 5 - 2 5	"8" TYPE TRANSMISSION DEVICE
C 5 - C 2 6	ECCENTRIC WHEEL WITH SCREW
C 5 - 2 7	EYEPIECE
C 5 - C 2 8	STEEL BALL
C 5 - C 2 9	LOOPER SLIDE BASE



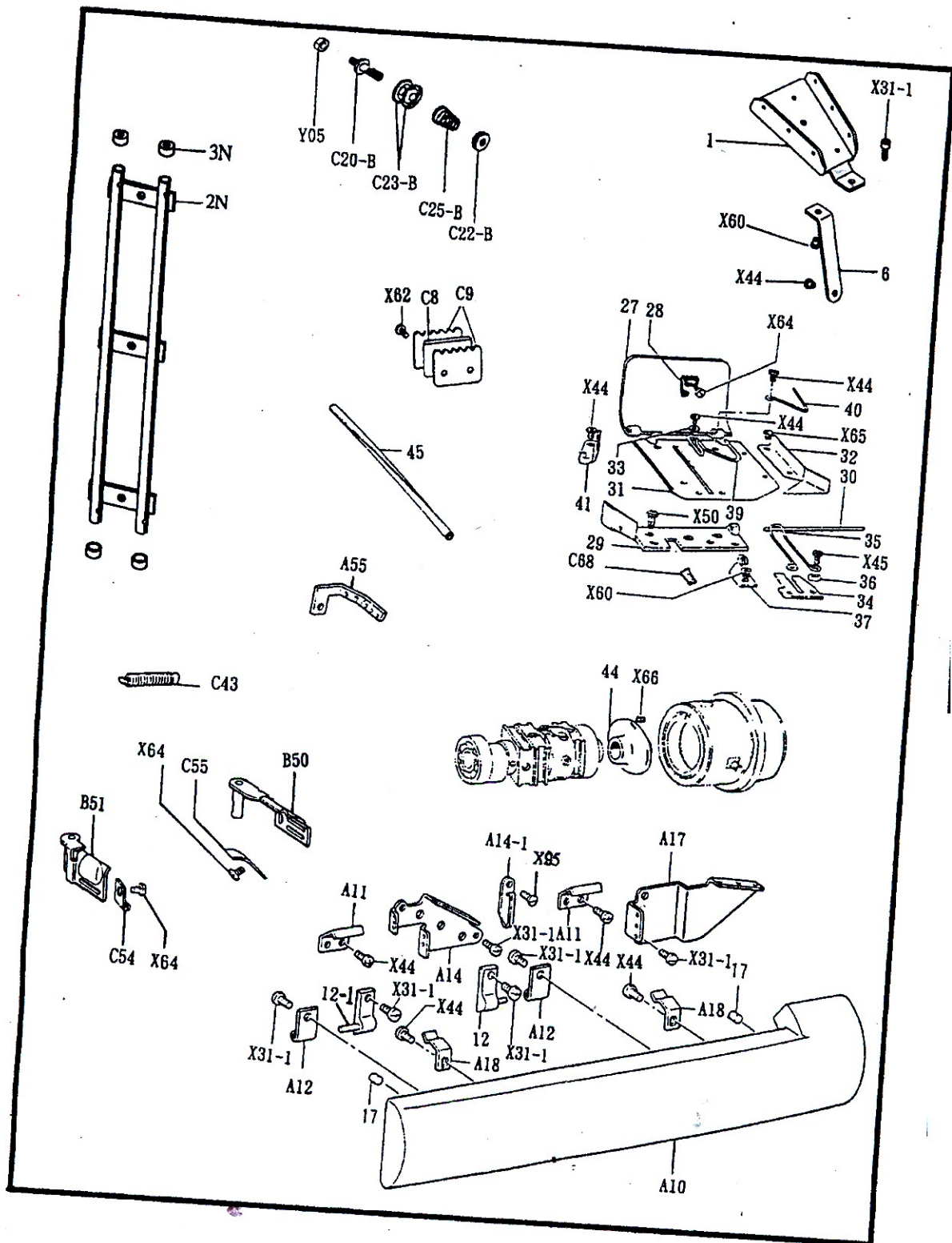
C 5 - C 3 0	WASHER
C 5 - C 3 1	LOOPER FEEDING FORK
C 5 - 3 2	-----
C 5 - 3 3	-----
C 5 - 7 0 2	SQUARE BALL
C 5 - X 8	SCREW M4.37-40*8
C 5 - X 9	SCREW M5.95
C 5 - X 2 4	SCREW M4.37
C 5 - X 2 8-1	SCREW M4.37
C 5 - X 3 1	SCREW M3.57
C 5 - X 3 2	SCREW M4.37
C 5 - X 3 4	SCREW M4.76
C 5 - X 3 5	SCREW M2.38
C 5 - X 3 6-1	SCREW M3.5*10
C 5 - X 3 7	SCREW M4.37
C 5 - X 3 8-1	SCREW M4.37
C 5 - X 3 9	SCREW M5.95
C 5 - X 4 2	SCREW M7.94
C 5 - X 5 0	SCREW M3.57-40*5
C 5 - X 5 2	SCREW M5.95
C 5 - Y 0 1	NUT M5.95



REF.NO.	NAME OF PARTS
C 6-1	UPPER THREAD GUIDE
C 6-6	THREAD GUIDE
C 6-C 7	LINE GUIDE DEVICE
C 6-8	SPRING WASHER
C 6-9	SPRING WASHER
C 6-1 0	NUT
C 6-1 1	TENSION DISC
C 6-1 2	TENSION DESC PRESSER
C 6-1 3	TENSION SPRING
C 6-1 4	PIN
C 6-C 1 5	TENSION RELEASE SHAFT
C 6-1 8	UPPER THREAD TENSION STUD SCREW
C 6-C 1 9	UPPER THREAD TAKE-UP GUIDE
C 6-C 2 1	UPPER THEAD ARM GUIDE
C 6-C 2 2	THREAD TAKE-UP COVER
C 6-2 5	TENSION RELEASE CRANK
C 6-2 6	TENSION RELEASE CONNECTING ROD
C 6-3 2	UPPER THREAD TAKE-UP GUIDE
C 6-C 3 2	UPPER THREAD TAKE-UP GUIDE
C 6-3 3	WASHER
C 6-C 3 4	UPPER THREAD TAKE-UP ASSY
C 6-3 5	UPPER THREAD TAKE-UP HOLDER
C 6-3 6	SPRING
C 6-3 7	NEEDLE BAR BUSH (D) THREAD GUIDE
C 6-3 8	WASHER



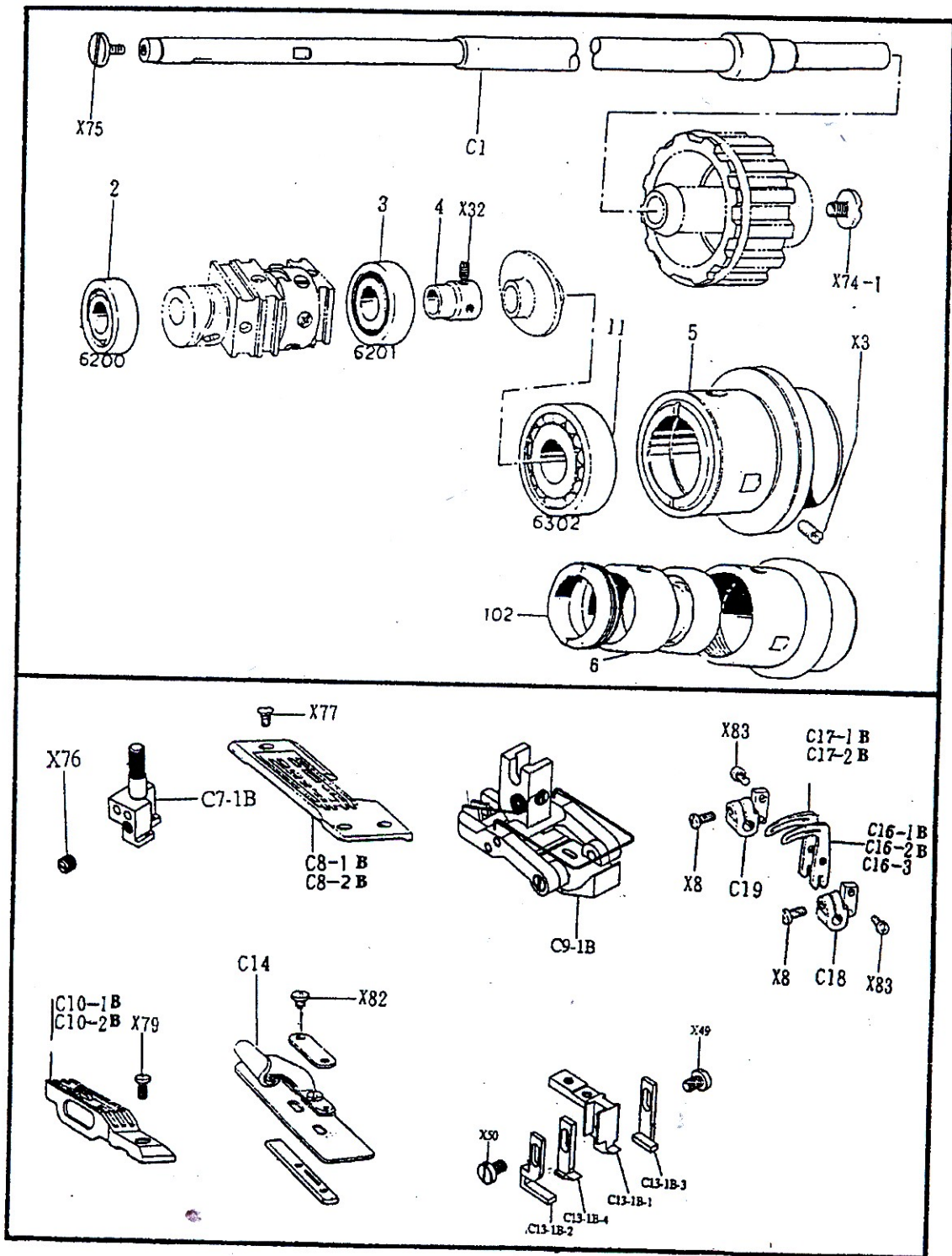
C 6-X 8	SCREW M3.57
C 6-X 4 4	SCREW M4.76
C 6-X 4 6	SCREW M3.57
C 6-X 4 7	SCREW M3.57
C 6-X 4 8	SCREW M3.57
C 6-X 4 9	SCREW M3.57
C 6-X 5 0	SCREW M3.57
C 6-X 5 3	SCREW M3.57
C 6-X 5 4	SCREW M2.38
C 6-X 5 8	UPPER THREAD TENSION STUD SCREW
C 6-X 5 9	SCREW M4.37
C 6-X 6 5	SCREW M2.38
C 6-Y 0 4	NUT M4.37



REF.NO.	NAME OF PARTS
C 7 - 1	LOWER THREAD GUIDE RETAINER
C 7 - 2N	TWO PIPE
C 7 - 3N	THREAD TUBE CLAMP
C 7 - 6	LOWER THREAD GUIDE SUPPORTER
C 7 - 7	FIXING PIN
C 7 - C 8	THREAD TRIMMER
C 7 - C 9	THREAD TRIMMER PLATE
C 7 - 1 2	LOWER THREAD GUIDE HINGE ASSEMBLY (L)
C 7 - 1 2 -1	LOWER THREAD GUIDE HINGE ASSEMBLY (R)
C 7 - 1 7	PASTEC COVER
C 7 - A 1 0	LOWER THREAD COVER
C 7 - A 1 1	PLATE SPRING
C 7 - A 1 2	FIXING PLATE
C 7 - A 1 4	LOWER THREAD TENSION BRACKET
C 7 - A 1 4-1	THREAD GUIDE
C 7 - A 1 7	LOWER THREAD GUIDE RETAINER
C 7 - A 1 8	PLATE SPRING
C 7 - A 5 5	LOWER THREAD GUIDE
C 7 - C 2 0-B	THREAD TENSION ROD
C 7 - C 2 2-B	LOWER THREAD TENSION NUT
C 7 - C 2 3-B	LOWER THREAD TENSION PLATE
C 7 - C 2 5-B	LOWER THREAD TENSION SPRING
C 7 - 2 7	THREAD TAKE - UP LEVER COVER
C 7 - 2 8	SPRING
C 7 - 2 9	LOWER THREAD TAKE - UP LEVER FRAME
C 7 - 3 0	LOWER THREAD TAKE - UP LEVER COVER SHAFT
C 7 - 3 1	LOWER THREAD TAKE - UP TEVER BASE
C 7 - 3 2	GUIDE PLATE
C 7 - 3 3	WASHER
C 7 - 3 4	LOWER THREAD GUIDE PLATE
C 7 - 3 5	SCREW
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 - C 4 3	SPRING
C 7 - 4 4	LOWER THREAD TAKE-UP DISC ASSEMBLY
C 7 - 4 5	LOWER THREAD FEED TUBE
C 7 - B 5 0	LOOPER SIDE COVER (R) ASSY
C 7 - B 5 1	LOOPER SIDE COVER (L) ASSY
C 7 - C 5 4	PLATE SPRING
C 7 - C 5 5	PLATE SPRING
C 7 - X 3 1-1	SCREW M3.57*10
C 7 - X 4 4	SCREW M3.75
C 7 - X 4 5	SCREW M3.75-40*6
C 7 - X 5 0	SCREW M3.75
C 7 - X 6 0	SCREW M3.75-40*4
C 7 - X 6 2	SCREW M3.57
C 7 - X 6 4	SCREW M2.38
C 7 - X 6 5	SCREW M2.38
C 7 - X 6 6	SCREW M6.35
C 7 - C 6 8	PIN
C 7 - X 9 5	SCREW 3.57
C 7 - Y 0 5	NUT M3.57



REF.NO.	NAME OF PARTS
C 8 - C1	LOWER SHAFT
C 8 - 2	BALL BEARING 6200
C 8 - 3	BALL BEARING 6201
C 8 - 4	BALL BEARING BUSH
C 8 - 5	BEARING CASE ASSY
C 8 - 6	BEARING FIXING BUSHING
C 8 - C7-1B	NEEDLE CLAMP WITH SCREW 1/4
C 8 - C7-2B	NEEDLE CLAMP WITH SCREW 3/16
C 8 - C7-3	NEEDLE CLAMP WITH SCREW 1/8
C 8 - C8-1B	NEEDLE PLATE 1/4
C 8 - C8-2B	NEEDLE PLATE 3/16
C 8 - C8-3	NEEDLE PLATE 1/8
C 8 - C9-1B	PRESSER FOOT ASSEMBLY 1/4
C 8 - C9-2B	PRESSER FOOT ASSEMBLY 3/16
C 8 - C9-3	PRESSER FOOT ASSEMBLY 1/8
C 8 - C10-1B	FEED DOG 1/4
C 8 - C10-2B	FEED DOG 3/16
C 8 - C10-3	FEED DOG 1/8
C 8 - 11	BALL BEARING 6302
C 8 - C13-1B-1	NEEDLE GUARD
C 8 - C13-1B-2	NEEDLE GUARD
C 8 - C13-1B-3	NEEDLE GUARD
C 8 - C13-1B-4	NEEDLE GUARD
C 8 - C14	LAPPER ASSY
C 8 - C16-1B	LOOPER 1/4
C 8 - C16-2B	LOOPER 3/16
C 8 - C16-3	LOOPER 1/8
C 8 - C17-1B	LOOPER 1/4
C 8 - C17-2B	LOOPER 3/16
C 8 - C17-3	LOOPER 1/8
C 8 - C18	LOOPER HOLDER
C 8 - C19	LOOPER HOLDER

C 8 - 102	BEARING FIXING SCREW
C 8 - X3	SCREW M7.94
C 8 - X8	SCREW M3.57-40*10
C 8 - X32	SCREW M4.37
C 8 - X49	SCREW M3.57
C 8 - X50	SCREW M3.57
C 8 - X72	SCREW M3.18-40*5
C 8 - X74-1	SCREW M6.35
C 8 - X75	SCREW M4.37
C 8 - X76	SCREW M4.37
C 8 - X77	SCREW M4.37
C 8 - X78	SCREW M3.75-40*8
C 8 - X79	SCREW M4.76
C 8 - X82	SCREW M3.57
C 8 - X83	SCREW M4.37-40*6

DP

X76

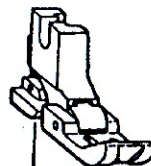


C7-1
C7-2
C7-3



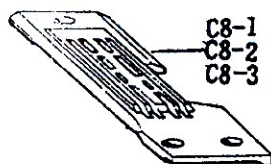
X72 C12

X78



C9-1
C9-2
C9-3

X77



C8-1
C8-2
C8-3

X79



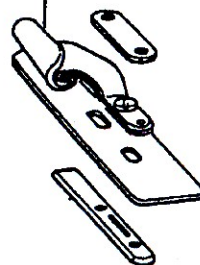
C10-1
C10-2
C10-3



C13

C14

X82



X83

C17-1
C17-2
C17-3

C16-1
C16-2
C16-3

X31

C19

X31

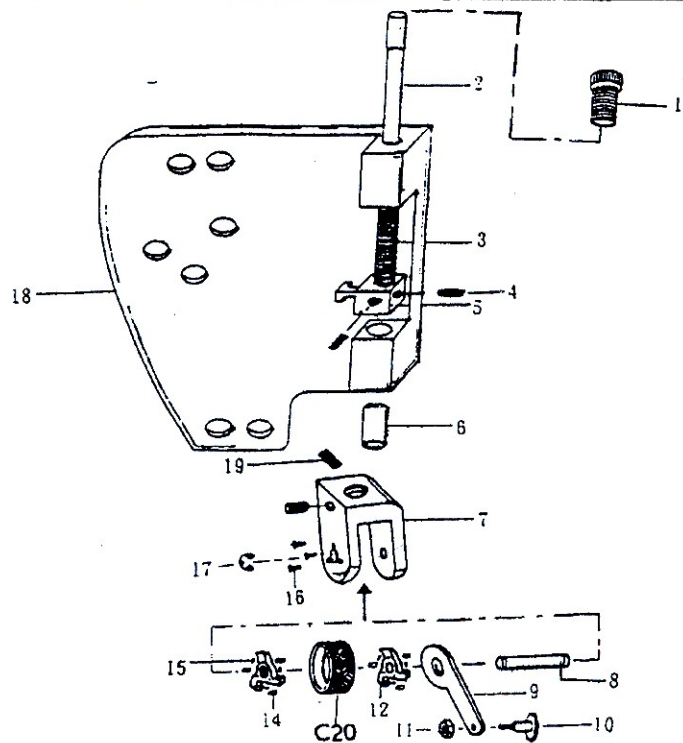
C18

X83

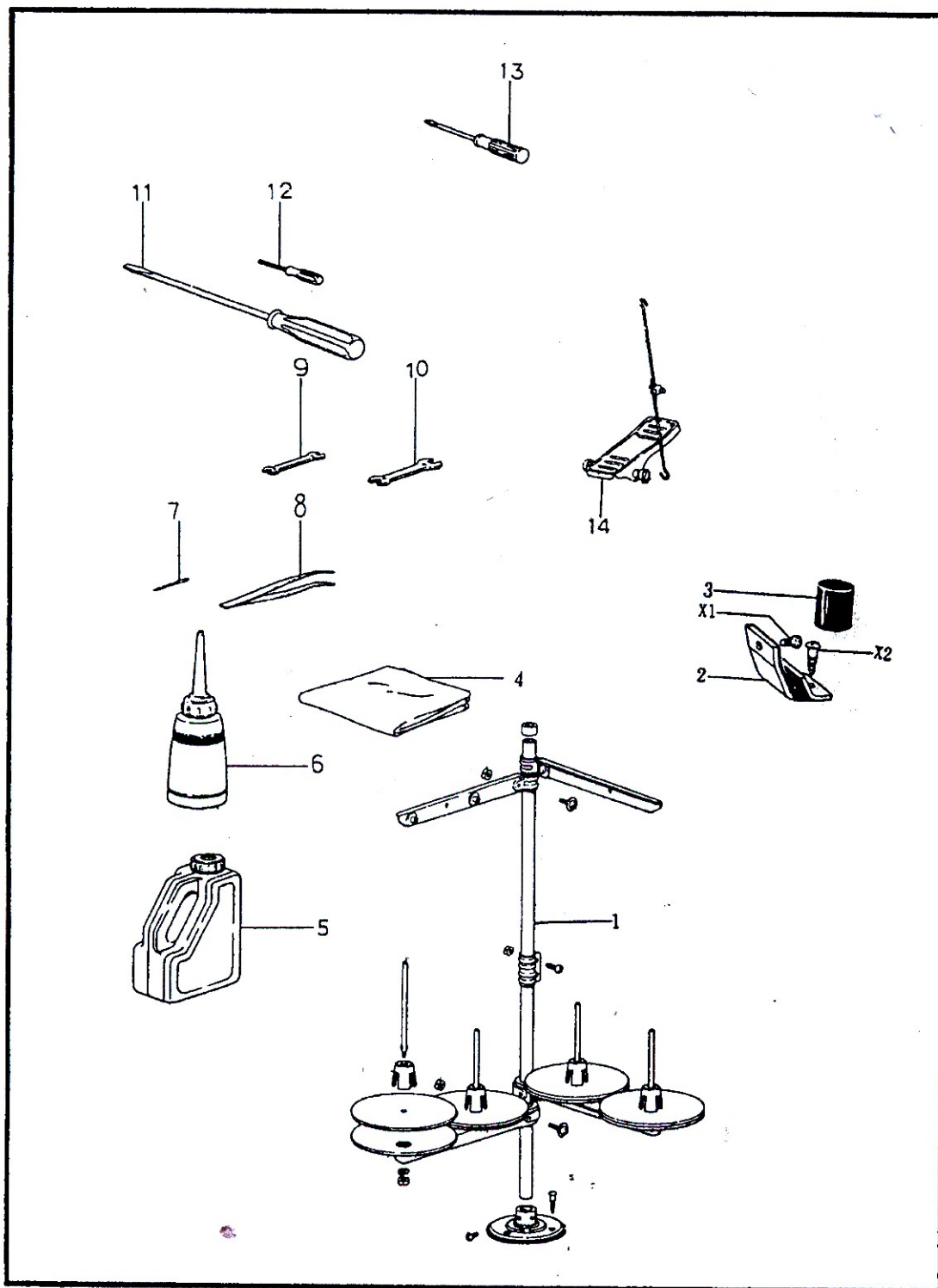
C10

REF.NO.	NAME OF PARTS
C 1 0 - C 7 - 1	NEEDLE CLAMP EITH SCREW 1/4
C 1 0 - C 7 - 2	NEEDLE CLAMP EITH SCREW 3/16
C 1 0 - C 7 - 3	NEEDLE CLAMP EITH SCREW 1/8
C 1 0 - C 8 - 1	NEEDLE PLATE 1/4
C 1 0 - C 8 - 2	NEEDLE PLATE 3/16
C 1 0 - C 8 - 3	NEEDLE PLATE 1/8
C 1 0 - C 9 - 1	PRESSER FOOT ASSY 1/4
C 1 0 - C 9 - 2	PRESSER FOOT ASSY 3/16
C 1 0 - C 9 - 3	PRESSER FOOT ASSY 1/8
C 1 0 - C 10 - 1	FEED DOG 1/4
C 1 0 - C 10 - 2	FEED DOG 3/16
C 1 0 - C 10 - 3	FEED DOG 1/8
C 1 0 - C 1 2	FINGER GUARD
C 1 0 - C 1 3	NEEDLE GUARD
C 1 0 - C 1 4	LAPPER ASSY
C 1 0 - C 16 - 1	LOOPER 1/4
C 1 0 - C 16 - 2	LOOPER 3/16
C 1 0 - C 16 - 3	LOOPER 1/8
C 1 0 - C 17 - 1	LOOPER 1/4
C 1 0 - C 17 - 2	LOOPER 3/16
C 1 0 - C 17 - 3	LOOPER 1/8
C 1 0 - C 1 8	LOOPER HOLDER
C 1 0 - C 1 9	LOOPER HOLDER
C 1 0 - X 3 1	SCREW M3.57-40*10
C 1 0 - X 7 2	SCREW M3.18-40*5
C 1 0 - X 7 6	SCREW M4.37
C 1 0 - X 7 7	SCREW M4.37
C 1 0 - X 7 8	SCREW M3.75-40*8
C 1 0 - X 7 9	SCREW M4.76
C 1 0 - X 8 2	SCREW M3.57
C 1 0 - X 8 3	SCREW M4.37-40*6

DP



REF.NO.	NAME OF PARTS
C 11 - 1	PRESSURE ADJUSTING SCREW
C 11 - 2	LOOER WHEEL PRWSSER BAR
C 11 - 3	SPRING
C 11 - 4	FIXING DEVICE SCREW
C 11 - 5	WHEEL DIRECTIO FIXING DEVICE
C 11 - 6	PRESSER ROD BUSHING
C 11 - 7	UPPER WHEEL SEAT
C 11 - 8	UPPER WHEEL CONNECTON
C 11 - 9	ONE WAY PULL HOLDER
C 11 - 10	SCREW
C 11 - 11	NUT
C 11 - 12	ONE WAY TRIANGULAR WHEEL
C 11 - 14	ONE WAY STILL BALL
C 11 - 15	ONE WAY STILL SPRING
C 11 - 16	TRIANGULAR AXLE FIXING SCREW
C 11 - 17	CHOCK RING
C 11 - 18	FACE PLATE (UPPER)
C 11 - 19	SCREW
C 11 - C20	UPPER WHEEL



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

TROUBLESHOOTING

Trouble	Cause	Inspection	Remedy	Page
Thread breaks.	Needles installed improperly.	Direction of long groove.	Refer to instructions for needle installing.	3
	Upper thread tension too great.	Upper thread tension.	Adjust upper thread tension.	5
	Lower thread tension too great.	Lower thread tension.	Adjust lower thread tension.	5
	Upper thread arm thread guide out of position.	Upper thread arm guide position.	Adjust upper thread arm thread guide.	10
	Needle eyes too small for threads.	Needle size and thread count.	Refer to the section on "Needles and Threads"	3
	Loopers damaged.	Damaged thread way.	Replace loopers.	
	Needle groove damaged.	Burrs in long groove.	Replace needle.	
Needles break.	Needles hit loopers.	Clearance between needles and loopers.	Adjust timing of loopers running clear of needles.	8
	Wrong timing of needles and loopers.	Timing of needles and loopers.	Adjust timing of Needles and loopers.	7
	Needle hit loopers.	Clearance between needles and needles guard.	Adjust needles guard.	8
	Needle eyes too small for threads.	Needle size and thread count.	Refer to the section on "Needles and Threads".	3
Stitches skip.	Needles installed improperly.	Direction of long groove.	Refer to instructions for needle installing.	3
	Looper points are dull.		Replace loopers with good ones.	
	Clearance between needles and loopers too great.	Clearance between needles and loopers too great.	Adjust timing of loopers running clear of needles.	8
	Needle and looper timing wrong.	Needle and looper timing.	Adjust needle and looper timing.	8
	Lower thread take-up timing wrong.	Lower thread take-up timing.	Adjust lower thread take-up timing.	10
Upper threads loose.	Upper thread tension too small.	Upper thread tension.	Adjust upper thread tension.	5
	Lower thread tension too great.	Lower thread tension.	Adjust lower thread tension.	5
	Upper thread take-up thread guide out of position.	Looseness of upper threads at the lowest position of needle bar.	Adjust upper thread take-up thread guide position.	9
Machine does not feed work.	Feed dog too low.	Feed dog height.	Adjust feed dog height.	9
	Presser foot pressure too small.	Presser foot pressure.	Adjust presser foot pressure.	5
	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.	

Trouble	Cause	Inspection	Remedy	Page
Non-alignment and wrinkles	Puller timing wrong.	Puller timing.	Adjust puller device timing.	11
	Puller feed incorrect.	Puller feed.	Adjust puller feed.	5
	Presser foot pressure incorrect.	Presser foot pressure.	Adjust presser foot pressure.	5
	Feed dog height incorrect.	Feed dog height.	Adjust feed dog height.	9