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Heavy Duty Compound Feed Lockstitch Sewing Machine

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Instruction Manual

Parts Catalog

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1. PRECAUTIONS BEFORE STARTING OPERATION

1) Safety Precautions:

- (1) When turning the power on, keep your hands and fingers away from the area around/under the needle and the area around the balance wheel.
- (2) Power must be turned off when the machine is not in use, or when the operator leaves the seat.
- (3) Power must be turned off when tilting the machine head, installing or removing the "V" belt, adjusting the machine, or when replacing.
- (4) Avoid placing fingers, hairs, bars etc., near the balance wheel, "V" belt, bobbin winder balance wheel, or motor when the machine is in operation.
- (5) Do not insert fingers into the thread take-up cover, under/around the needle, or balance wheel when the machine is in operation.
- (6) If a belt cover, finger guard, eye guard are installed, do not operate the machine without these safety devices.

2) Precautions before Starting Operation:

- (1) If the machine's oil pan has an oil sump, never operate the machine before filling it.
- (2) If the machine is lubricated by a drop oiler, never operate the machine before lubricating.
- (3) When a new sewing machine is first turned on, verify the rotational direction of the balance wheel with the power on. (The balance wheel should rotate counter-clockwise when viewed from the balance wheel)
- (4) Verify the voltage and (single or three) phase with those given on the machine nameplate.

3) Precautions for Operating Conditions:

- (1) Avoid using the machine at abnormally high temperature (35°C or higher) or low temperature (5°C or lower)
- (2) Avoid using the machine in dusty conditions.

2. MAIN SPECIFICATIONS

Item	1	2	3	4
Max. Sewing Speed	2000 rpm			
Stitch Length	0-10 mm			
Take-up Lever Stroke	71.5 mm			
Needle Bar Stroke	35 mm			
Height of Between Main and Sub Presser Foot	2.5 mm			
Presser foot lift	By Hand	8 mm		
	By Knee	14mm		
Needle	D17 22# 24#			
Rotating Hook	Double Capacity Hook	Large Hook for Trimmer		Double Capacity Hook
Lubrication	Manual			
Motor	370W Clutch Motor		Speed adj. Motor	370W Clutch Motor

3. PREPARATION AND LUBRICATION

1) Cleaning the machine

Before leaving the factory, the machine parts are coated with rust-preventive grease, which may be hardened and contaminated by dust during storage and shipment. This grease must be removed with gasoline.

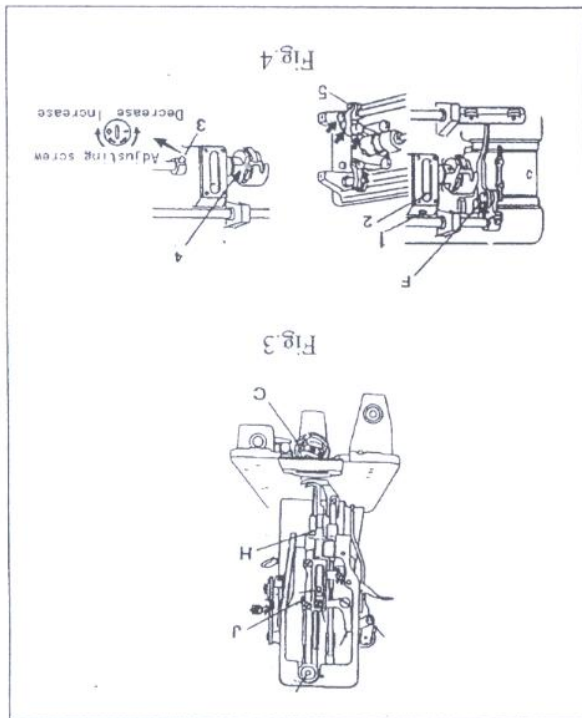
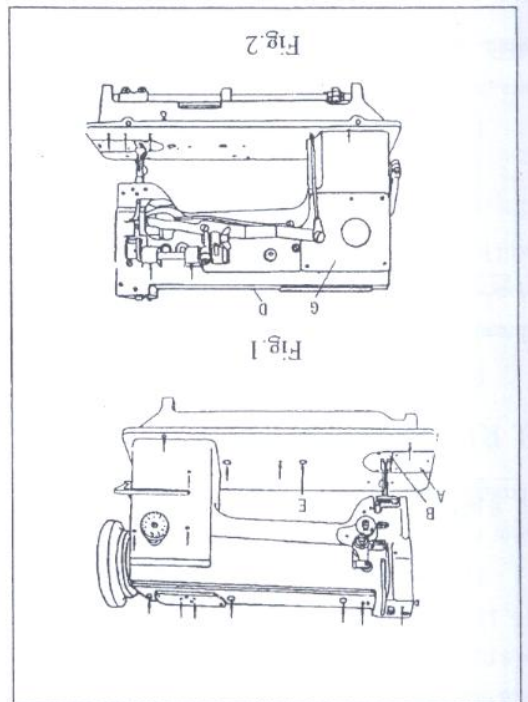
2) Examination

Though every machine is confirmed by strict inspection and test before leaving the factory, the machine parts may be loose or deformed after long distance transportation with jolt. A thorough examination must be performed after cleaning the machine. Turn the balance wheel to see if there is running obstruction, parts collision, uneven resistance or abnormal noise. If these exist, adjustment must be made accordingly before run-in operation.

3) Oiling (Fig. 1, 2, 3, 4)

Please do not operate the machine before lubricating well. The points with arrow in the fig are oil positions.

Caution: Please use white spindle oil.



Lubrication of rotating hook (Fig. 4)

Add the oil from the oil hole 1 until to the position 2.

Adjusting the lubrication (Fig. 4)

Oil adjusting screw 3 can adjust the lubrication of the rotating hook: Turn oil-adjusting screw 3 clockwise to increase oil and turn oil-adjusting screw 3 counter-clockwise to decrease oil.

4. REPLACE NEEDLES (Fig. 5)

1) Turn the balance wheel to lift needle bar 1 to the upper end of its stroke.

2) Loosen needle clamp screw 2. While keeping the long groove of the needle leftward fully insert the needle shank up to the bottom of the needle socket.

Caution: The direction of the long groove should be left.

3) Then tighten needle clamp screw 2.

5. WINDING (Fig.6)

1) Put the bobbin 3 on the bobbin winder shaft as far as it will go.

2) Bring the thread forward toward the bobbin and wind from below in clockwise direction several times around the bobbin.

4) Push the lever 4 toward other side so that the winding wheel and "V" belt will engage and then start the machine.

5) The winding wheel will automatically be free from "V" belt and stop after the bobbin is filled with thread.

6. WINDING ADJUSTMENT (Fig.6)

1) When the wound thread layer does not present a cylindrical shape, loosen set screw 5 of bobbin winder tension bracket and slide bracket leftward or rightward. After adequately positioning the bracket, tighten set screw 5.

2) Do not overfill the bobbin. The optimum length of thread will fill about 80% of bobbin capacity. This can be adjusted by adjusting screw 6 of bobbin winder stop latch.

3) Adjusting of the winding tension: The winding tension can be adjusted by tension screw 7.

7. REMOVING AND INSERTING THE BOBBIN

1) Turn the balance wheel to lift needle bar 1 to the upper end of its stroke. Place the feed dog at this side in its travel turning the balance wheel, and open the slide plate A. (Fig. 1)

2) Open on the drip pan, and then open the hinged latch with left thumb and index finger. And pull bobbin case and bobbin from rotary hook. While the latch is held open, the bobbin will be retained in the bobbin case. Release of the latch and turning of the open side of the bobbin case downward will cause the bobbin to drop out.

3) Hold the bobbin between the thumb and forefinger of your right hand and pull out a length of about 5 cm of thread. Holding the bobbin case in your left hand turn the open side up and place the threaded bobbin into it. (Fig. 7)

4) With the right hand guide the thread into the slot in the edge of the bobbin case. Then pull the thread to the left, under tension spring 1 (Fig.7) and into the delivery eye. In order to keep the bobbin from dropping out of the case when it is turned with the open side down, always keep the hinged latch at the front of the bobbin

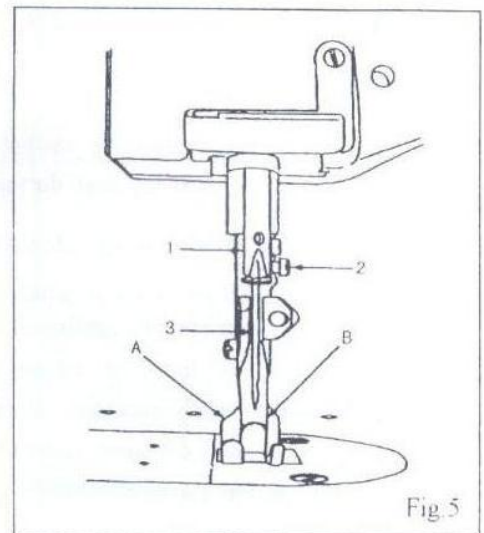


Fig 5

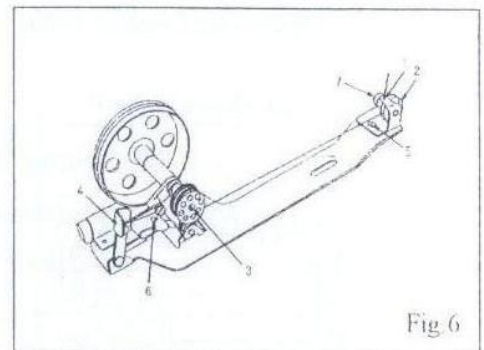


Fig 6

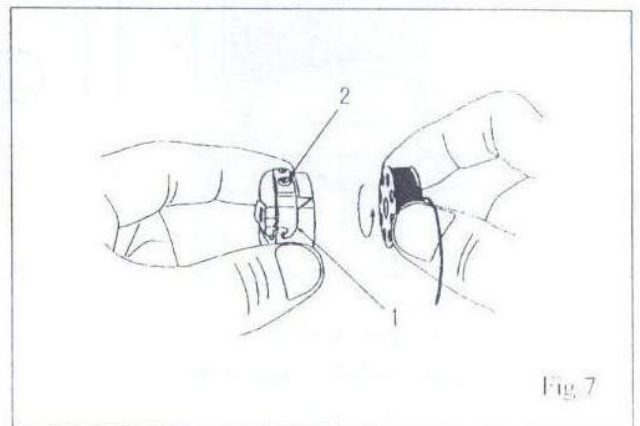


Fig. 7

case open.

5) Take the threaded bobbin case by the latch and place it on the center stud of the bobbin case holder. Release latch and press bobbin case on to center stud until the latch catches the undercut thereon with a click that can be heard. Permit about 5 cm of bobbin thread to hang down freely. Be sure to push the slide plate to the right before starting to sew.

8. THREADING (Fig.8)

1) Raise the needle bar to its highest point and lead the thread from the thread stand the following order. From the thread stand lead the thread from back to front through the lower guide hole in pin 1 on top of the machine arm, then again from right to left through the upper guide hole in this pin. Pass thread in weaving fashion through the three holes in guide 2, and from right to left over and between the tension disc 3. Now pull thread downward and from right to left beneath and around thread controller 4, continue to pull thread upward against the pressure of the wire spring into the fork 5, in the thread controller. Guide upward through the point of controller discs 6, and thread guide 7, and from right to left through the eye in take-up lever 8, down through thread guide 7, again and then through 9, 10, 11 and from left to right through the eye of the needle 12.

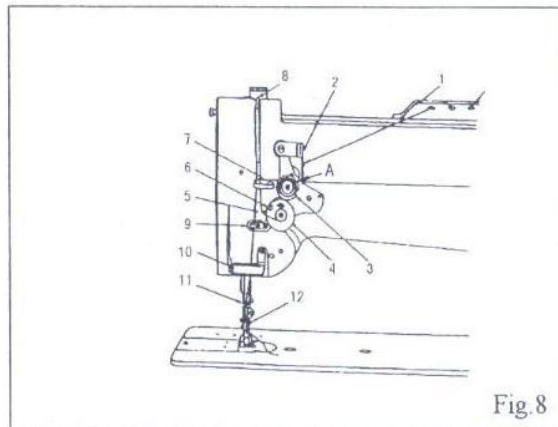


Fig.8

2) After the above threading, hold the end of thread with your left hand, and turn the balance wheel with your right hand so that bobbin thread may be picked up by needle thread. And put their ends of thread back through under the presser foot for starting operation.

9. REGULATING THE THREAD TENSIONS

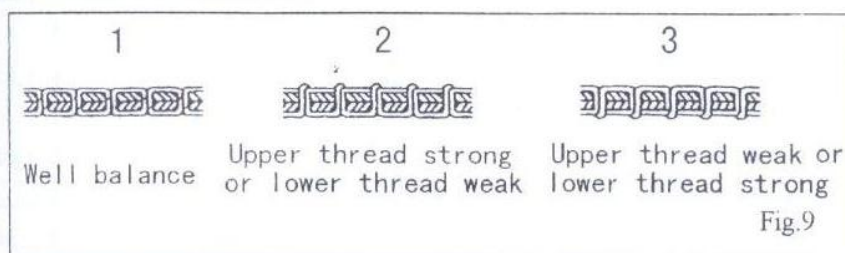
For ordinary stitching, the tension of the upper and the lower threads should be equal so as to lock both threads in the center of the material. (1 Fig.9) If the tension on either thread is stronger than on the other, imperfect stitching will be the result. If the tension on the upper thread is greater than that on the lower thread, it will lie straight along the upper surface of the material. (2 Fig.9) If the tension on the lower thread is greater than that on the upper thread, the lower thread will lie straight along the underside of the material. (3 Fig.9)

1) Tension of the upper (needle) thread:

Before adjusting the tension of the upper (needle) thread, be certain that the presser foot is let down but not in lifted position. To adjust tension, turn serrated nut (A Fig.8) on tension device to clockwise to increase tension, while turning it to counter-clockwise to decrease it.

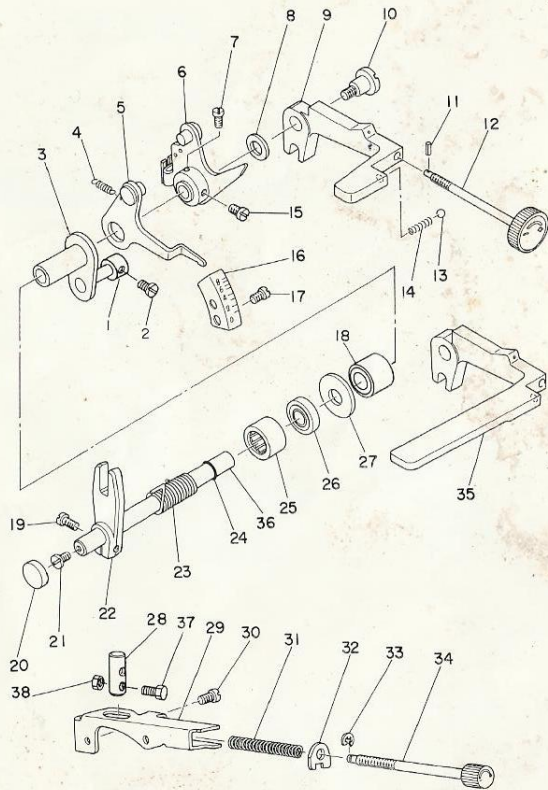
2) Tension of the lower (bobbin) thread: (Fig.7)

The lower (bobbin) thread tension is controlled by the larger screw (2 Fig.7) near the end of the spring at the outside of the bobbin case. Turning this screw to clockwise to increase the thread tension, while turning it to counter-clockwise to decrease it.



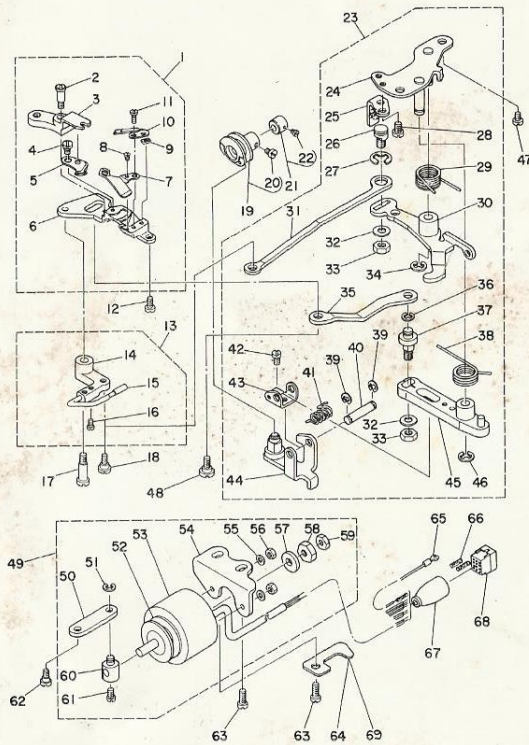
7. TOP FEED MECHANISM COMPONENTS (2)

上送り関係 (2)



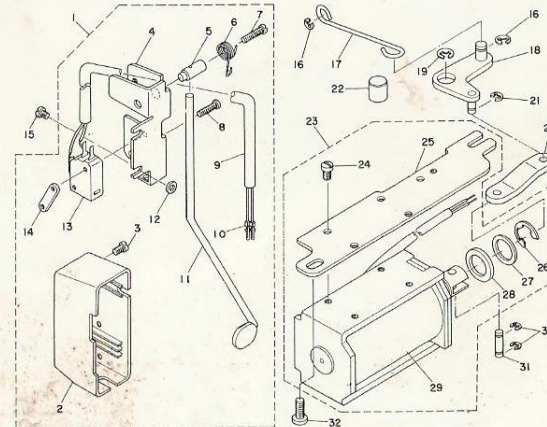
8. THREAD TRIMMER COMPONENTS

糸切り関係



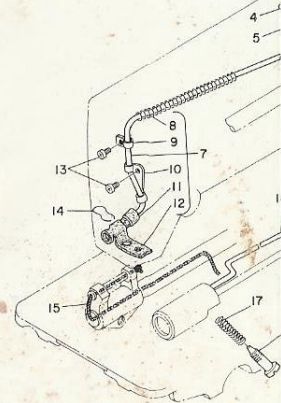
9. AUTOMATIC REVERSE FEED MACHANISM COMPONENTS

自動逆送り関係



11. OIL LUBRICATION COMP

給油関係



REF. NO.	NOTE	PART NO.	DESCRIPTION	AMT.
1		CS-0700611-SD	THRUST COLLAR	1
2		SS-6090510-SP	SCREW 9/64-40 L=5	1

REF. NO.	NOTE	PART NO.	DESCRIPTION	AMT.
1		112-32055	KNIFE UNIT	1
2		SD-0460702-TP	HINGE SCREW D=4.6 H=7	(1)

REF. NO.	NOTE	PART NO.	DESCRIPTION	AMT.
1		112-28251	REVERSE FEED SWITCH ASM.	1
2		111-02506	REVERSE FEED SWITCH LEVER	(1)
3		SS-4110615-SP	SCREW 11/64-40 L=6	(1)
4		111-02001	REVERSE FEED SWITCH BASE	(1)
5		111-02100	REVERSE FEED SWITCH SHAFT	(1)
6		111-02209	REVERSE FEED SWITCH SPRING	(1)
7		SS-4111815-SP	SCREW	(1)
8		SM-4031501-SC	SCREW	(2)
9		HV-5000700-00	2-CORE CARTYPE CORD	(1.5)
10		D6043-555-B00	PIN TERMINAL, MALE	(2)
11		112-28202	REVERSE FEED CONTROL LEVER	(1)
12	#01	WP-0553216-SD	WASHER	(1)
13		HA-0017000-00	REVERSE FEED SWITCH	(1)
14		111-02308	REVERSE FEED SWITCH PLATE	(1)
15		SS-4120915-SP	SCREW 12/64-28 L=9	1
16		RE-0500000-KO	SNAP RING 5	2
17		111-01300	REVERSE FEED CONNECTING SHAFT	1
18		112-27758	REVERSE FEED LINK ASM.	1
19		RE-0900000-KO	SNAP RING 9.0	1
20		112-28004	SOLENOID CONNECTING LINK	1
21		RE-0400000-KO	SNAP RING 4	1
22		112-28103	REVERSE FEED BASE COLLAR	1
23		112-27550	SOLENOID INSTALLING BASE ASM.	1
24		SS-7110740-TP	SCREW 11/64-40 L=7	(4)
25		112-27600	SOLENOID INSTALLING PLATE	(1)
26		RE-1200000-KO	SNAP RING 12	(1)
27		WP-1703001-SC	WASHER 17X30X3	(1)
28		D2468-555-B00	RUBBER PLUNGER	(1)
29		112-27501	REVERSE FEED SOLENOID	(1)
30		RE-0400000-KO	SNAP RING 4	2
31		D2464-555-B00	LINK DRIVING MAGNET PIN	1
32		SS-4150915-SP	SCREW 15/64-28 L=9	1

Note (注記) #01... For DLJ-5490-6-08

REF. NO.	NOTE	PART NO.	DESCRIPTION
1		110-21508	OIL SIG
2		RO-1952401-00	RUBBER
3		RT-0600402-EA	LUBRICA
4		SS-6080340-SP	SCREW 1
5		112-22007	HOLDER
6		SQ-1150501-SD	CONNECT
7		112-21652	OIL TUB
8		B3404-122-000	SPRING
9		B3536-122-000	HOLDER
10		112-21801	HOLDER
11		112-21702	FELT B
12		112-21603	FELT A
13		SS-4120615-SP	SCREW 3
14		112-21900	OIL FEL
15		CG-2520000-00	OIL WIC
16		110-21300	OIL TUB
17		B2616-372-000	SPRING
18		B3514-412-000	OIL ADJ
19		110-20054	LUBRICA
20		110-20302	OIL PUM
21		SL-4030851-SF	SCREW
22		110-20906	HOOK DR
23		110-20005	OIL PUM
24		110-20708	OIL PUM
25		110-20500	PLUNGER
26		110-20609	PLUNGER
27		110-20401	PLUNGER
28		110-20807	OIL PUM
29		110-20203	LUBRICA
30		SE-4301041-SR	SCREW
31		110-21409	RUBBER
32		112-21504	OIL TUB
33		SS-4150915-SP	SCREW 1

14. RELATIVE POSITION OF THE FEED DOG TO NEEDLE PLATE

(Fig.13)

- 1) Set the stitch length at minimum.
- 2) Turn the balance wheel so as to raise the feed dog to its highest point.
- 3) Lay down the machine head toward the other side and loosen the screw 5 (Fig.4).
- 4) Adjust to be 32.1 mm from the edge of the needle plate to the center of the needle hole on the feed dog. (Fig. 13)
- 5) Securely tighten the screw.

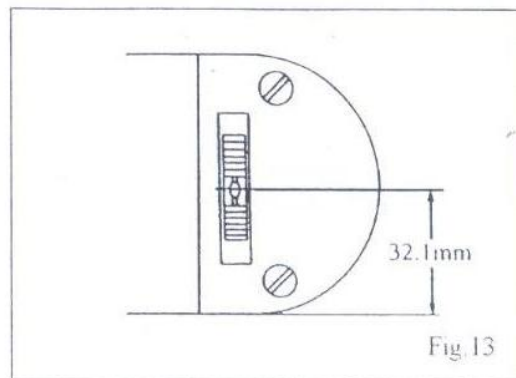


Fig. 13

15. THE POSITION OF THE NEEDLE AND THE NEEDLE HOLE OF THE FEED DOG

Turning the balance wheel to lower slowly the needle bar, check whether the needle descends to the center of the needle hole of the feeder or not. (Please check again the needle is perfect one.)

- 1) Remove the cover G (Fig.2) and loosen the screw 1 (Fig.14) slightly.
- 2) Holding the bottom of the needle bar rock frame H (Fig.3), move it as may be required to get the correct position to the feed dog.
- 3) Tighten the screw and close the cover.

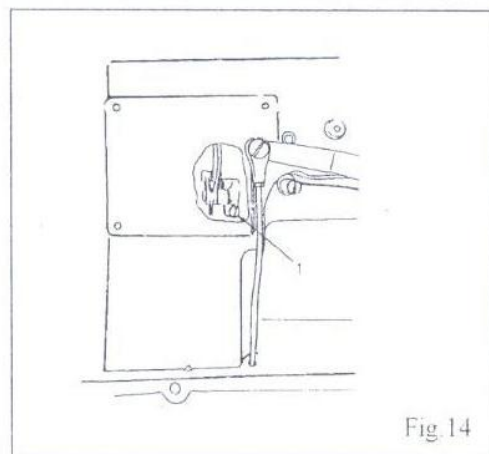


Fig. 14

16. TIMING THE NEEDLE WITH FEED DOG (Fig.15, Fig.16)

It is important that the timing relationship between the needle on its downward stroke and the feed dog movement is maintained at all times. When the scarf of the needle on the downward stroke reaches the top surface of the feed dog, the feed dog movement must start. When adjustment is required, use the following procedure to change the position of cam

- 1) Loosen the screw 1 for cover plate 2 and then remove the cover plate 2.
- 2) Normally put the arrow mark 7 of the cam 6 on the V ditch 5 of arm shaft. Then tighten the cam screw.
- 3) Turn the balance wheel to the needle at 1 mm up from its lowest point.
- 4) Pushing the stitch length regulating lever up and down, turn the cam 6 and set this at the point both the needle and the feed dog rest. After positioning completed, tighten the each screw securely

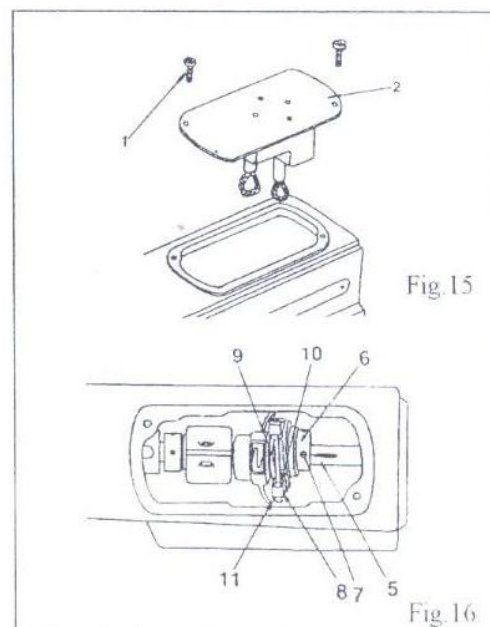


Fig. 15

Fig. 16

17. ADJUSTING THE HEIGHT OF THE NEEDLE BAR (Fig.17)

When the needle bar is at its highest point, normally the measurement between the surface of the needle plate and the upper end of the needle eye is 22.3 mm.

You can also adjust this at its lowest point. In this case, normally the measurement between the surface of the needle plate and the upper end of the needle eye is 11 mm. To adjust this, loosen the screw J (Fig.3) and raise or lower the needle bar as may be required. Then, tighten the screw upon completion of adjustment.

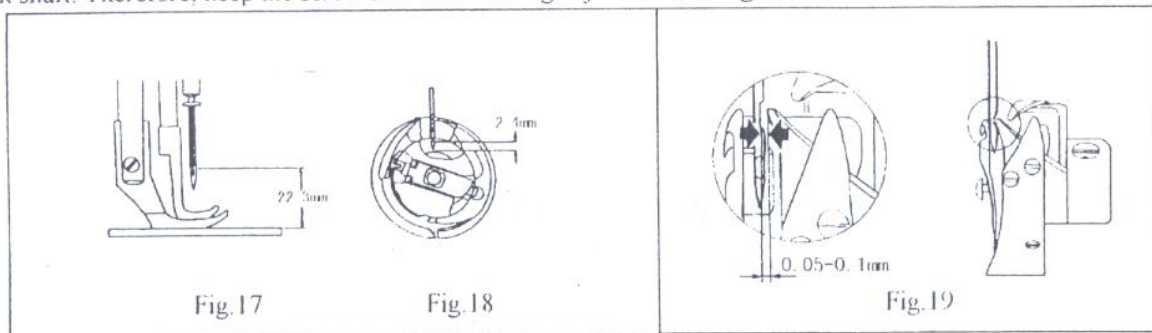
NOTE: These measurements are approximate standard, accordingly, following final adjustments "TIMING BETWEEN THE HOOK AND THE NEEDLE" are recommended.

18. TIMING BETWEEN THE HOOK AND THE NEEDLE (Fig.18, Fig.19)

After setting the needle bar height, set stitch length to minimum, turn the balance wheel toward you until the needle bar reaches its lowest point. Continue turning and allow the needle bar to raise about 2 mm while on its upward stroke. With needle bar in this position, the point of the sewing hook should be at the center of the needle, and normally, the measurement between the hook point and the upper end of the needle eye should be 2.4 mm, further the clearance between the hook point and the needle hollow should be about 0.05 to 0.1 mm.

1) If the sewing hook should not be timed correctly, loosen the three set screws. Turn the hook shaft to align the hook point with the center of the needle. Re-tighten the three set screws and re-check the timing of the sewing hook.

2) To adjust the clearance between the hook point and the needle hollow, loosen the two screws and move the hook to the right or to the left as may require. Please note one of the two screws is placed on the V ditch of hook shaft. Therefore, keep the screw on V ditch during adjustment. Re-tighten the screws.



19. ADJUSTING THE HEIGHT OF THE PRESSER FEET (Fig.20)

1) Adjustment by the presser bar lifter: Loosen the screw 1 sufficiently, raise the presser bar lifter and loosen the set screw 2. Move the lifting presser foot up or down as may be required so as to get the correct height and tighten the screws.

2) Adjusting the lift of alternating presser feet: If the height of the lifting presser foot changes, the momentums of the lifting and vibrating presser foot vary, thus the height of the vibrating presser foot must be adjusted. To adjust this, lower the presser bar lifter, holding the vibrating presser foot B (Fig.6) and loosen the hexagon screw 3 and move the presser foot up or down as may be required. After setting the position, tighten the screw.

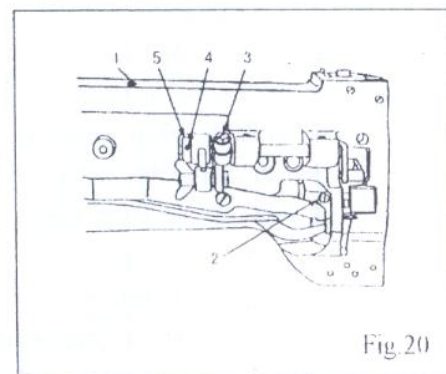


Fig.20

20. TIMING OF THE VIBRATING PRESSER FOOT

This is the normal timing when turn the balance wheel toward you, after lowering the presser bar lifter, the vibrating presser foot should reach the feed dog earlier than the needle eye comes to, and when the needle raises, the vibrating presser foot should leave the feed dog after the needle eye has left the feeder. This is due the reason that the vibrating presser foot must tightly hold the goods while the needle is passing the goods for avoiding irregular stitches. To adjust this, set the lift of the alternating presser feet to equal, loosen the two screws 4 (Fig.20) and adjust the rotating position of the cam 5 (Fig.20) faster or slower as may be desired, and tighten the screws.

21. ADJUSTMENT OF THE CLEARANCE BETWEEN FEED FORKED CONNECTION AND FEED FORK COLLAR (Fig.15, Fig.16)

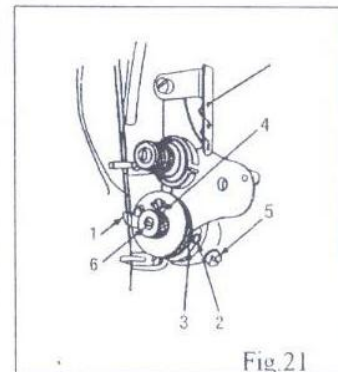
Incorrect clearance between the fork 8 of feed forked connection and feed fork collar 9 will bring irregular stitch length or overheating, etc. To adjust this, open the cover plate. Remove the cover plate and the oil reservoir. To increase the clearance, loosen the screw and turn the screw to left or counter-clockwise. This adjustment should be done with turning the balance wheel toward you to get correct clearance. Upon completion of adjustment, tighten the screw which is loosened to touch the feed fork.

22. ADJUSTING THE THREAD CONTROLLER SPRING (Fig.21)

Normally, the thread controller spring 1 should hold slack of the upper thread until the needle reaches to the goods, and it should pause while raising of the needle and passing of the upper thread through the bobbin case.

1) For more controller action on the thread: Loosen the stop screw 2, move the stop to the right (For less action, move to the left). Tighten the screw.

2) To adjust the tension spring: Loosen the serrated nut 4 and the screw 5. Turn the tension stud 6 slightly to the left to strengthen the tension (to lighten the tension, turn to the right) with a screwdriver. Tighten the screw and nut upon completion of adjustment.



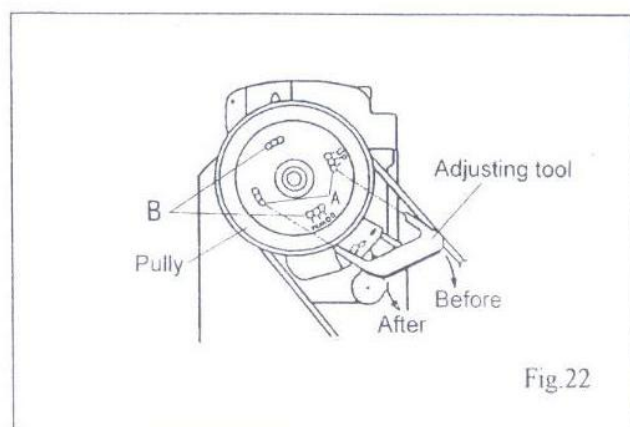
23. ADJUSTMENT OF NEEDLE BAR STOP POSITION

(Fig. 22, 23)

1) Adjusting of "Up" position

When the pedal is kicked down by heel, the machine stops at "UP" position. If the marks deviate larger than 3 mm adjust as follows:

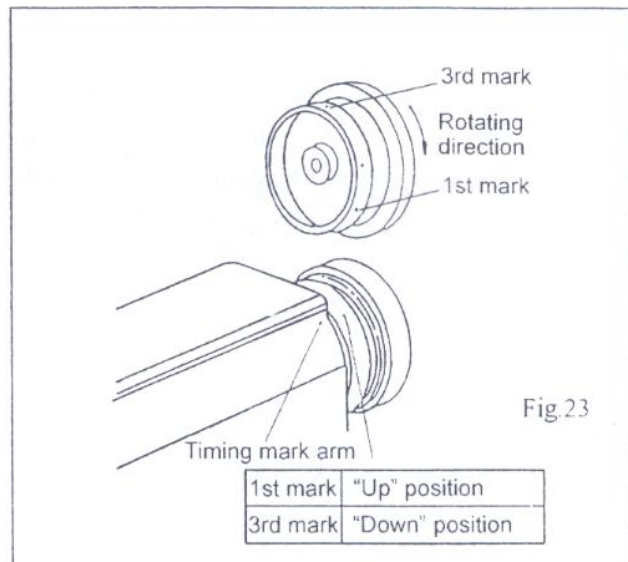
- (1) Disconnect the plug (12 pins) of cable from the machine head.
- (2) Run the machine and stop at "UP" position.
- (3) While holding the balance wheel insert the "adjusting tool" in the hole A, then remove the tool.



2) Adjusting of "DOWN" position

Set the machine stops at "DOWN" position. When the pedal is kicked down by hell, the machine stops as "DOWN" position. If the marks deviate larger than 3 mm adjust as follows:

- (1) Disconnect the plug (12 pins) of cable from the machine head.
- (2) Run the machine and stop at "DOWN" position.
- (3) While holding the balance wheel insert the "adjusting tool" in the hole B, then remove the tool.



- 3) Confirm the stop operation then the plug (12 pins) coming from the machine head into the receptacle.

24. ADJUSTMENT OF KNIFE ENGAGEMENT (Fig.24)

- 1) Position of movable knife (left) and fixed blade:

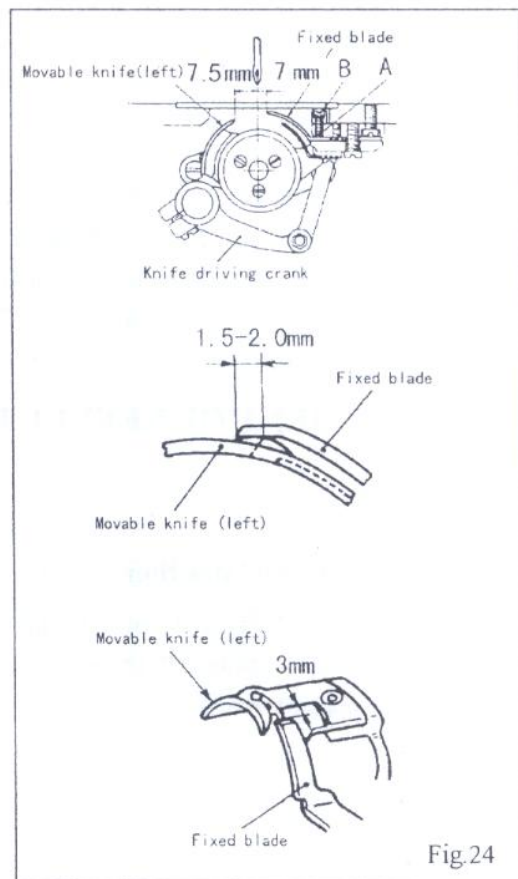
See the illustration. The standard distances from the needle center are 7.5 mm and 7 mm from the movable knife (left) and fixed blade respectively.

- 2) Adjustment of knife engagement:

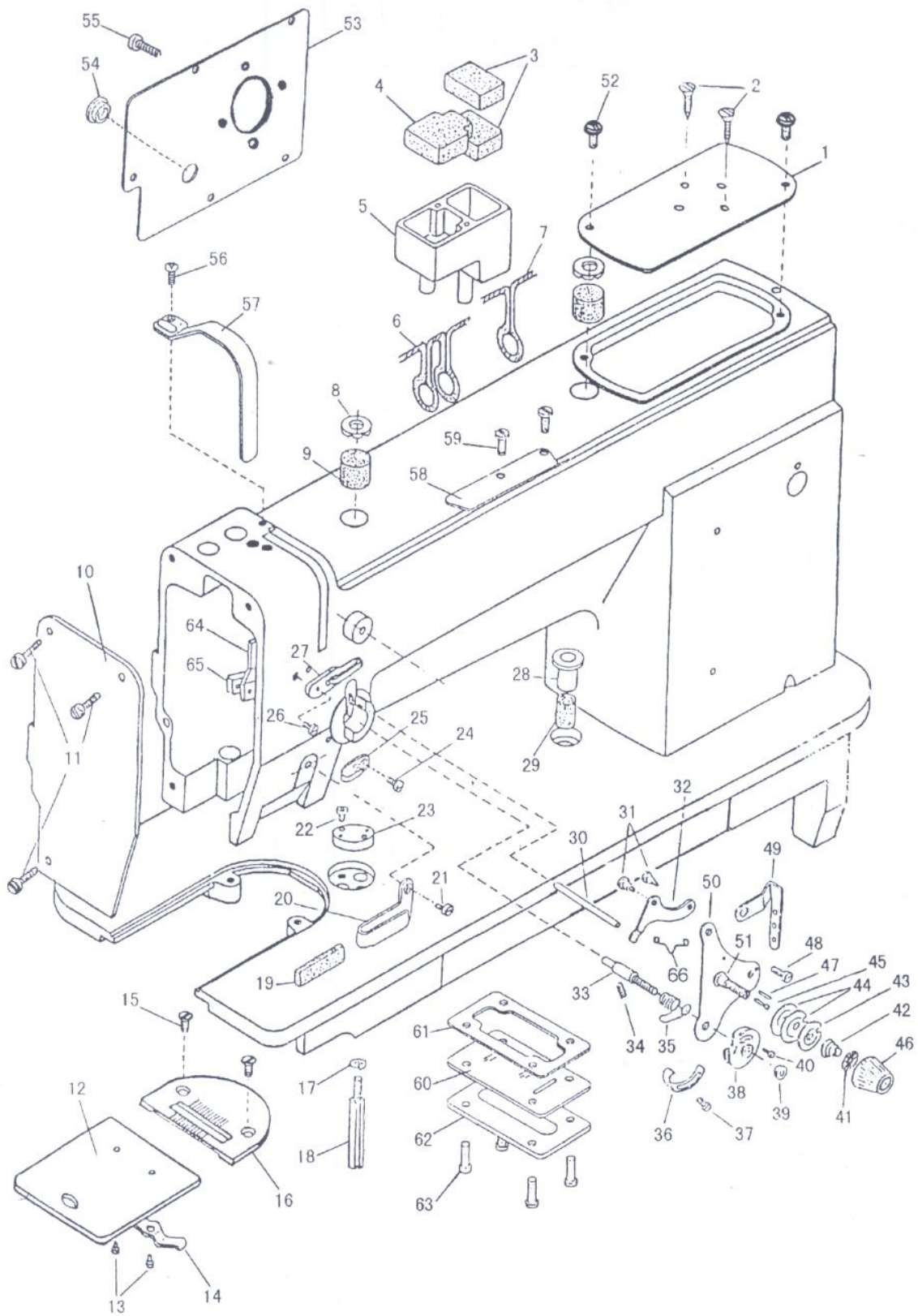
With the solenoid activated, turn on the machine. This rotates the thread trimming cam which rotates the movable knife (left). When the movable knife (left) has moved to its farthest distance, the standard engagement of the blade is 1.5-2.0 mm.

- 3) Adjustment of knife engaging pressure

If a thread is poorly cut, particularly when it is thick, slightly increase the engaging pressure. This should solve the problem. The engaging pressure can be adjusted in this way: Loosen lock nut B and adjust it by using adjusting screw A



A.ARM BED AND ITS ACCESSORIES



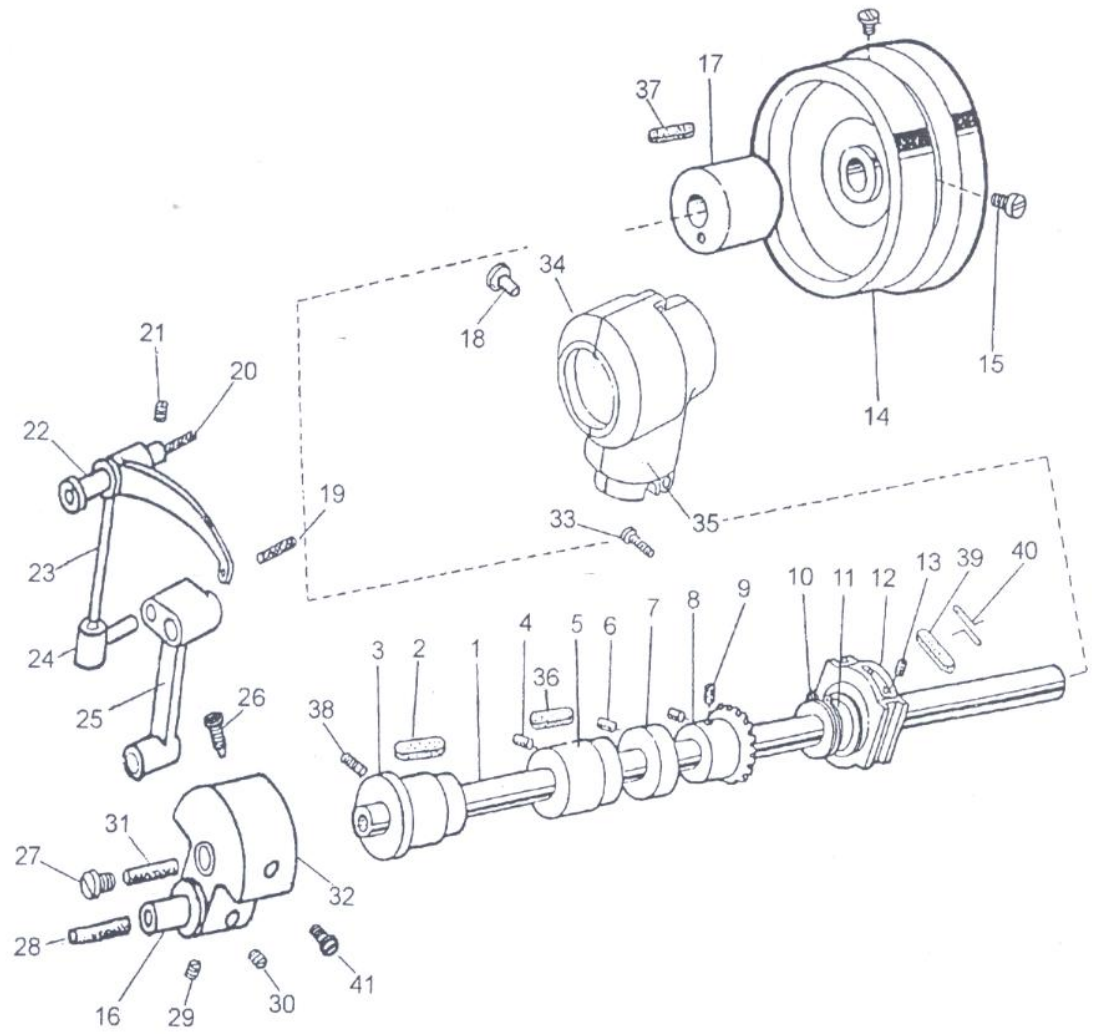
A.ARM BED AND ITS ACCESSORIES

Fig. No.	Part No.	Description	1	2	3	4	Remarks
A01		Arm cover(right)	1	1	1	1	
A02		Screw	2	2	2	2	
A03		Felt	1	1	1	1	
A04		Felt	2	2	2	2	
A05		Arm oil box(right)	1	1	1	1	
A06		Oil wick	1	1	1	1	
A07		Oil wick	1	1	1	1	
A08		Oil cap	1	1	1	1	
A09		Oiling felt	1	1	1	1	
A10		Face plate	1	1	1	1	
A11		Screw	2	2	2	2	SM11/64(40)×9
A12		Slide plate	1	1	1	1	
A13		Screw	2	2	2	2	SM3/32(56)×2.2
A14		Slide plate spring	1	1	1	1	
A15		Screw	2	2	2	2	SM11/64(40)×6.5
A16		Needle plate	1	1	1		
A16		Needle plate				1	
A17		Spring washer	1	1	1	1	
A18		Leg	1	1	1	1	
A19		Felt	1	1	1	1	
A20		Thread guide	1	1	1	1	
A21		Screw	1	1	1	1	SM9/64(40)×5
A22		Screw	2	2	2	2	SM11/64(40)×5.5
A23		Cloth guide plate	1	1	1	1	
A24		Screw	1	1	1	1	SM9/64(40)×6
A25		Thread guide	1	1	1	1	
A26		Screw	1	1	1	1	SM3/16(28)×13
A27		Thread guide	1	1	1	1	
A28		Oil cap	1	1	1	1	
A29		Felt	2	2	2	2	
A30		Thread tension releasing pin	1	1		1	
A30		Thread tension releasing pin(long)			1		
A30		Thread tension releasing pin(short)			1		
A31		Screw	2	2	2	2	
A32		Tension releasing lever	1	1	1	1	
A33		Screw	1	1	1	1	
A34		Screw	1	1	1	1	SM15/64(28)×6.8
A35		Thread controller spring	1	1	1	1	
A36		Thread controller spring stop	1	1	1	1	
A37		Screw	1	1	1	1	
A38		Thread guide	1	1	1	1	
A39		Nut	1	1	1	1	
A40	-----	Ser screw	1	1	1	1	SM3/32(56)×6

A.ARM BED AND ITS ACCESSORIES

Fig. No.	Part No.	Description	1	2	3	4	Remarks
A41		Stop disc	1	1	1	1	
A42		Tension releasing spring	1	1	1	1	
A43		Thread tension releasing plate	1	1	1	1	
A44		Thread tension disc	2	2	2	2	
A45		Thread tension releasing pin	1	1	1	1	
A46		Nut	1	1	1	1	
A47		Pin	1	1	1	1	
A48		Screw	1	1	1	1	
A49		Thread guide	1	1	1	1	
A50		Tension bracket	1	1	1	1	
A51		Thread tension stud	1	1	1	1	
A52		Screw	2	2	2	2	SM11/64(40)×9
A53		Arm side plate			1		
A53		Arm side plate	1	1		1	
A54		Rubber plug			1		
A54		Rubber plug	1	1		1	
A55		Screw	5	5	5	5	
A56		Screw	1	1	1	1	SM11/64(40)×10
A57		Thread take-up lever cover	1	1	1	1	
A58		Thread guide	1	1		1	
A58		Thread tension complete			1		
A59		Screw	2	2		2	
A60		Oil window	1	1	1	1	
A61		Sealing washer	1	1	1	1	
A62		Gland	1	1	1	1	
A63		Screw	5	5	5	5	SM11/64(40)×9
A64		Oil guard	1	1	1	1	
A65		Plate for oil guard	1	1	1	1	
A66		Plate spring	1	1	1	1	

B.ARM SHAFT MECHANISM



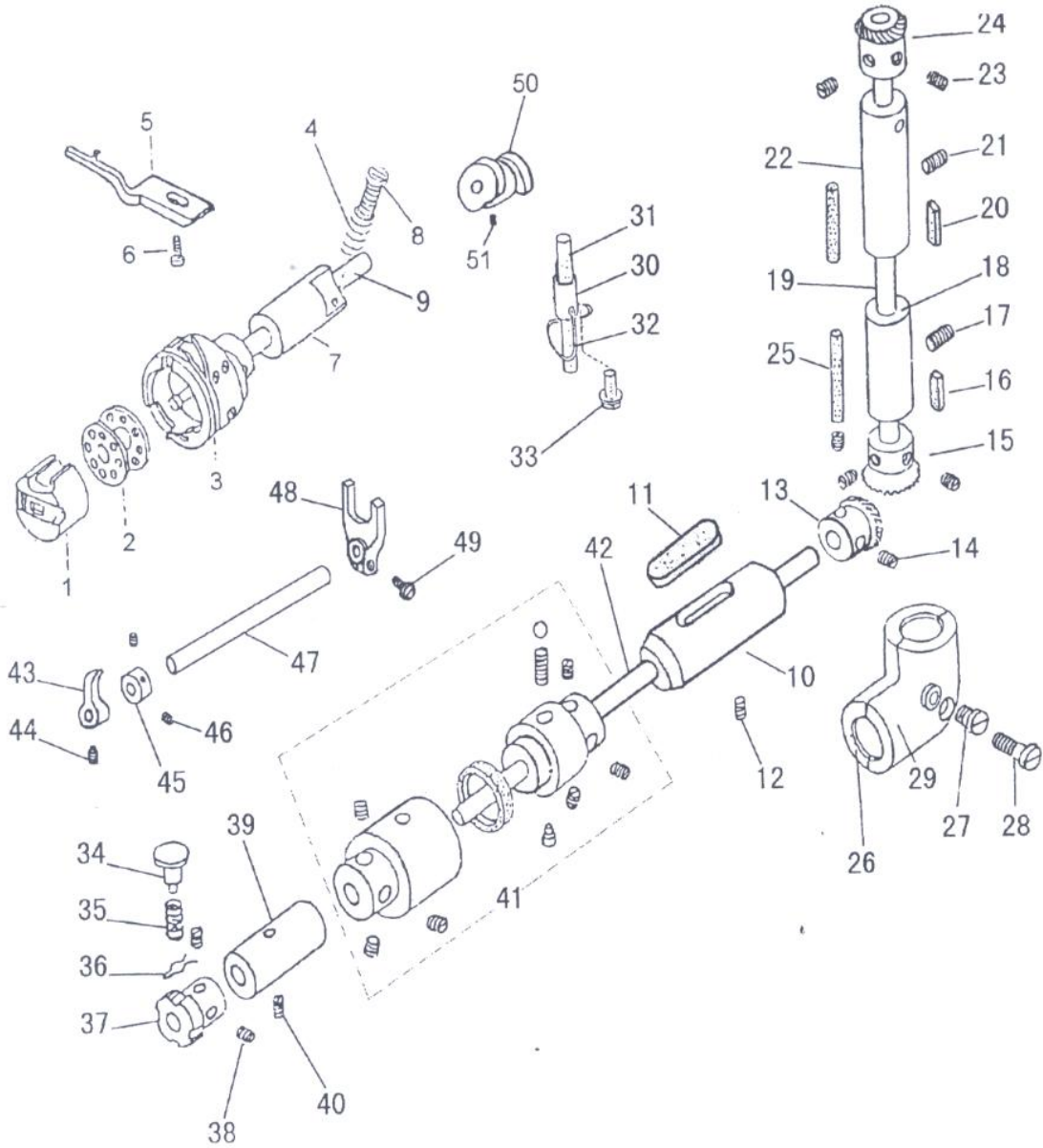
B.ARM SHAFT MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
B01		Arm shaft	1	1	1	1	
B02		Felt	1	1	1	1	
B03		Arm shaft bushing(left)	1	1	1	1	
B04		Screw	1	1	1	1	SM15/64(28)×10
B05		Arm shaft bushing(middle)	1	1	1	1	
B06		Screw	2	2	2	2	SM1/4 (40) ×4
B07		Arm shaft collar	1	1	1	1	
B08		bevel gear for arm shaft	1	1	1	1	
B09		Set screw	8	8	8	8	SM1/4(40)×7
B10		C-type ring	1	1	1	1	
B11		Feed and feed lifting eccentric	1	1	1	1	
B12		Slide block	1	1	1	1	
B13		Screw	2	2	2	2	
B14		Balance wheel	1	1		1	
B15		Screw	2	2		2	SM15/64(28)×12
B16		Hinge pin	1	1	1	1	
B17		Arm shaft bushing(right)	1	1	1	1	
B18		Rubber plug	1	1	1	1	
B19		Oil wick	1	1	1	1	
B20		Oil wick	1	1	1	1	
B21		Screw	1	1	1	1	SM15/64(28)×10
B22		Hinge pin	1	1	1	1	
B23		Thread take-up lever	1	1	1	1	
B24		Slide lever	1	1	1	1	
B25		Needle bar connecting stud			1		
B25		Needle bar connecting stud	1	1		1	
B26		Set screw	1	1		1	SM9/32 (28)
B26		Screw			1		SM9/32 (28)
B27		Arm shaft oil packing stop screw	1	1	1	1	
B28		Oil wick	1	1	1	1	
B29		Screw	1	1		1	SM1/4 (40) ×4
B30		Set screw	1	1		1	SM1/4 (40) ×7
B30		Set screw			2		SM1/4 (40) ×6
B31		Oil wick	1	1	1	1	
B32		Needle bar crank			1		
B32		Needle bar crank	1	1		1	
B33		Screw	2	2	2	2	
B34		Bevel gear cover(up-backward)	1	1	1	1	
B35		Bevel gear cover(up-forward)	1	1	1	1	
B36		Felt	1	1	1	1	
B37		Felt	1	1	1	1	
B38		Screw	1	1	1	1	SM15/64(28)×10
B39		Felt	1	1	1	1	

B.ARM SHAFT MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
B40		Oiling felt presser pin	1	1	1	1	
B41		Screw	1	1		1	SM9/32 (28) ×12
B41		Screw			1		SM9/32 (28) ×12

C. ROTATING HOOK SHAFT MECHANISM



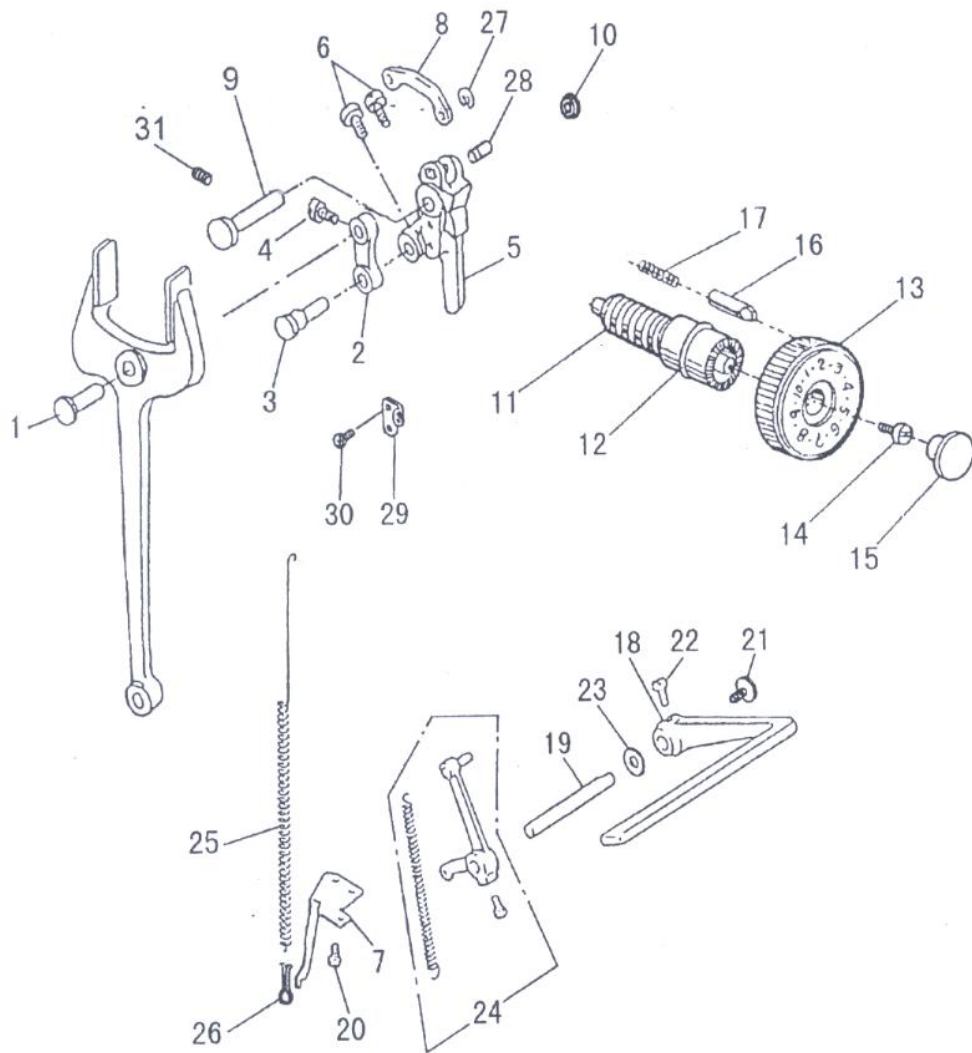
C.ROTATING HOOK SHAFT MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
C01		Bobbin case complete			1		
C01		Bobbin case complete		1			
C01		Bobbin case complete	1			1	
C02		Bobbin			1		
C02		Bobbin	1	1		1	
C03		Rotating hook complete			1		
C03		Rotating hook complete		1			
C03		Rotating hook complete	1			1	
C04		Spring for oil adjusting screw	1	1	1	1	
C05		Rotating hook positioner			1		
C05		Rotating hook positioner	1	1		1	
C06		Screw	1	1	1	1	SM11/64(40)×10
C07		Hook shaft bushing(left)			1		
C08		Oil adjusting screw			1		
C09		Rotating hook shaft			1		
C09		Rotating hook shaft(left)		1			
C09		Rotating hook shaft	1			1	
C10		Hook shaft bushing(right)	1		1	1	
C10		Hook shaft bushing(right)		1			
C11		Felt	1		1	1	
C11		Felt		1			
C12		Screw	1	1	1	1	SM11/64(40)×8.5
C13		Bevel gear for hook shaft	1	1	1	1	
C14		Set screw	4	4	4	4	SM1/4 (40) ×7
C15		Bevel gear for vertical shaft(lower)	1	1	1	1	
C16		Felt	1	1	1	1	
C17		Screw	1	1	1	1	SM15/64(28)×10
C18		Vertical shaft bushing(lower)	1	1	1	1	
C19		Vertical shaft	1	1	1	1	
C20		Felt	1	1	1	1	
C21		Screw	1	1	1	1	SM15/64(28)×10
C22		Vertical shaft bushing(up)	1	1	1	1	
C23		Set screw	2	2	2	2	SM1/4 (40) ×7
C24		Bevel gear for vertical shaft(up)	1	1	1	1	
C25		Oil wick	2	2	2	2	
C26		Bevel gear cover(lower-backward)	1	1	1	1	
C27		Rubber plug	2	2	2	2	
C28		Screw	1	1	1	1	M5×14
C29		Bevel gear cover(lower-foreward)	1	1	1	1	
C30		Oil pipe	1	1	1	1	
C31		Felt	1	1	1	1	
C32		Oiling felt spring	1	1	1	1	
C33		Screw	1	1	1	1	SM11/64(40)×9

C.ROTATING HOOK SHAFT MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
C34		Push button		1			
C35		Push button spring		1			
C36		Stop ring		1			
C37		Ratchet wheel		1			
C37		Hook shaft lock ratchet		1			
C38		Screw		2			SM1/4 (40) ×6
C38		Screw		2			SM15/64 (28) ×4.5
C39		Hook shaft bushing(middle)			1		
C39		Hook shaft bushing(middle) complete		1			
C40		Set screw		1			SM11/64(40)×8.5
C41		Safety clutch complete		1			
C42		Hook shaft(right)		1			
C43		Positioner		1			
C44		Screw		1			
C45		Positioner		1			
C46		Screw		2			SM15/64 (28) ×4.5
C47		Pin		1			
C48		Fork		1			
C49		Screw		1			M5×12
C50		Thread trimming eccentric			1		
C51		Screw			2		

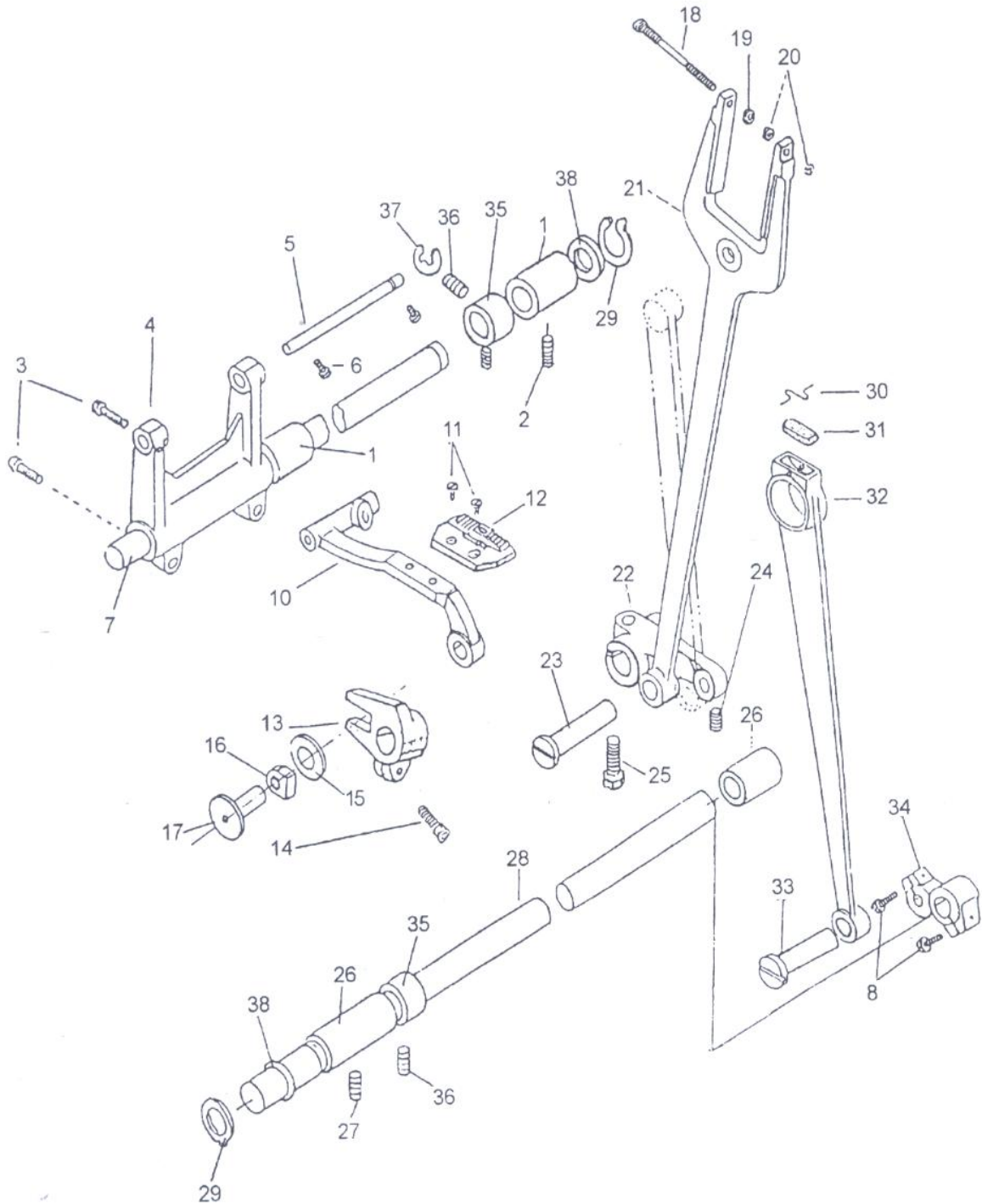
D. STITCH REGULATOR MECHANISM



D.STITCH REGULATOR MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
D01		Hinge pin	1	1	1	1	
D02		Feed connecting link	1	1	1	1	
D03		Feed connecting link hinge pin	1	1	1	1	
D04		Screw	1	1	1	1	SM15/64 (28) ×10
D05		Feed regulator cam			1		
D05		Feed regulator cam	1	1			
D05		Feed regulator cam				1	
D06		Screw	2	2	2	2	SM15/64 (28) ×10
D07		Spring retainer			1		
D07		Spring retainer	1	1		1	
D08		Reverse link			1		
D09		Hinge pin for feed regulator	1	1	1		
D09		Hinge pin for feed regulator				1	
D10		Rubber plug	1	1	1	1	
D11		Feed regulator screw bar	1	1	1	1	
D12		O-ring	1	1	1	1	
D13		Dial			1		
D13		Dial	1	1		1	
D14		Screw	1	1	1	1	SM3/16 (28) ×8
D15		Rubber plug	1	1	1	1	
D16		Stopper pin	1	1	1	1	
D17		Spring for stopper pin	1	1	1	1	
D18		Reverse feed lever	1	1	1	1	
D19		Reverse feed lever pin	1	1	1	1	
D20		Screw	2	2	2	2	SM11/64(40)×8
D21		Screw	1	1	1	1	
D22		Screw	2	2	2	2	SM15/64 (28) ×10
D23		Washer	1	1	1	1	
D24		Reverse feed lever crank complete			1		
D24		Reverse feed lever crank complete	1	1		1	
D25		Spring			1		
D26		Spring retainer			1		
D27		Stop ring			1		
D28		Pin			1		
D29		Spring retainer			1		
D30		Screw			2		SM11/64(40)×8
D31		Screw	1	1	1	1	

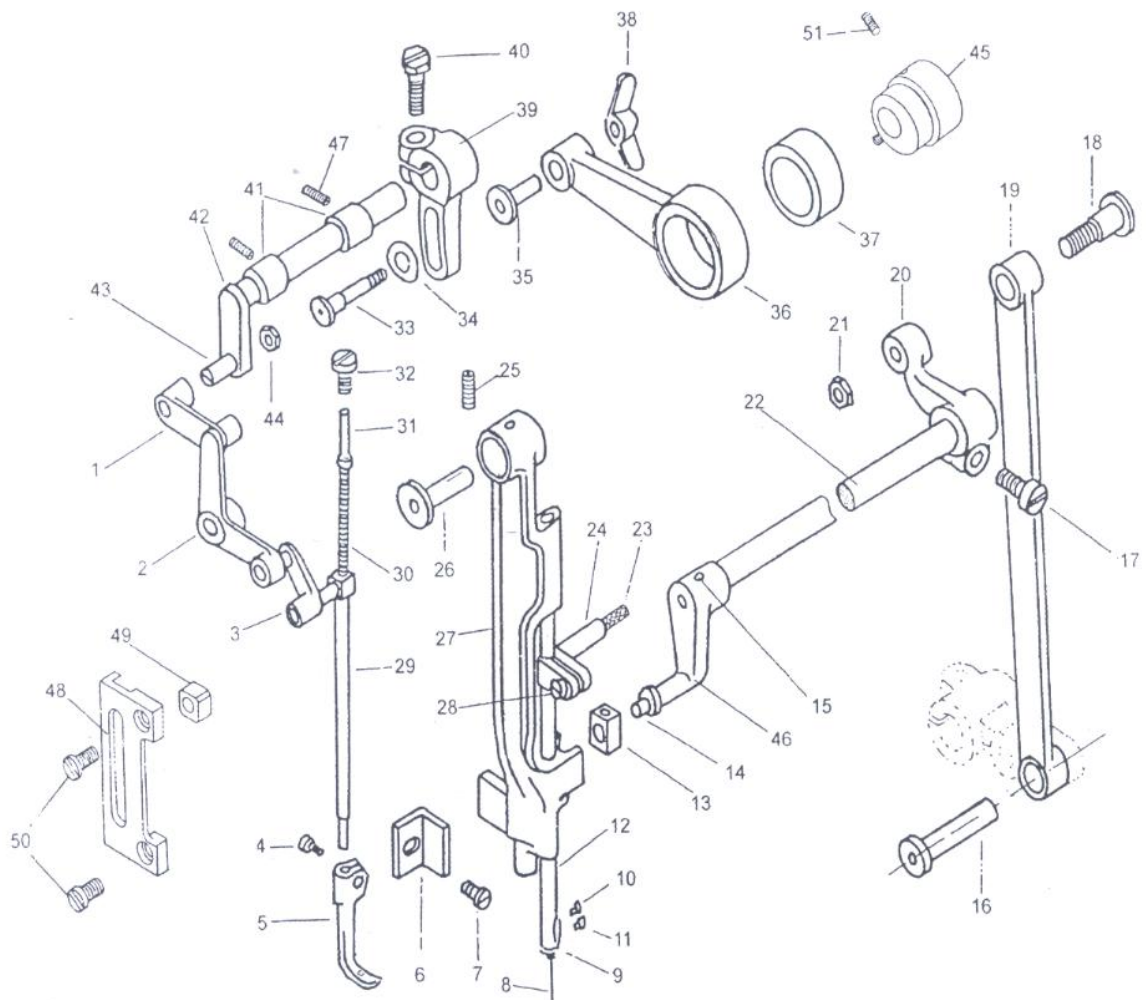
E. LOWER FEEDING MECHANISM



E.LOWER FEEDING MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
E01		Feed rock shaft bushing	2	2	2	2	
E02		Set screw	2	2	2	2	SM15/64(28)×10
E03		Screw	2	2	2	2	
E04		Feed rock shaft crank	1	1	1	1	
E05		Feed bar shaft	1	1	1	1	
E06		Screw	2	2	2	2	SM15/64(28)×10
E07		Feed rock shaft	1	1	1	1	
E08		Screw	2	2	2	2	
E10		Feed bar	1	1	1	1	
E11		Screw	2	2	2	2	SM1/8(44)×6
E12		Feed dog	1	1			
E12		Feed dog			1		
E12		Feed dog		-		1	
E13		Feed lifting rock shaft crank(left)	1	1	1	1	
E14		Screw	2	2	2	2	M5×12
E15		Washer	1	1	1	1	
E16		Slide block	1	1	1	1	
E17		Slide block shaft	1	1	1	1	
E18		Screw	1	1	1	1	
E19		Nut 1	1	1	1	1	M4
E20		Nut 2	2	2	2	2	M3
E21		Feed forked connection	1	1	1	1	
E22		Feed rock shaft crank	1	1	1	1	
E23		Feed rock shaft crank hinge pin	1	1	1	1	
E24		Screw	3	3	3	3	SM15/64 (28) ×10
E25		Screw	1	1	1	1	
E26		Feed lifting rock shaft bushing	2	2	2	2	
E27		Screw	2	2	2	2	SM15/64(28)×10
E28		Feed lifting rock shaft	1	1	1	1	
E29		Stop ring	2	2	2	2	
E30		Oiling felt spring	1	1	1	1	
E31		Felt	1	1	1	1	
E32		Feed lifting link	1	1	1	1	
E33		Feed rock shaft crank hinge pin	1	1	1	1	
E34		Feed lifting rock shaft crank(right)	1	1	1	1	
E35		Feed rock shaft collar	2	2	2	2	
E36		Set screw	4	4	4	4	SM1/4(40)×4
E37		Stop ring	1	1	1	1	
E38		Washer	2	2	2	2	

F.NEEDLE BAR FEEDING MECHANISM



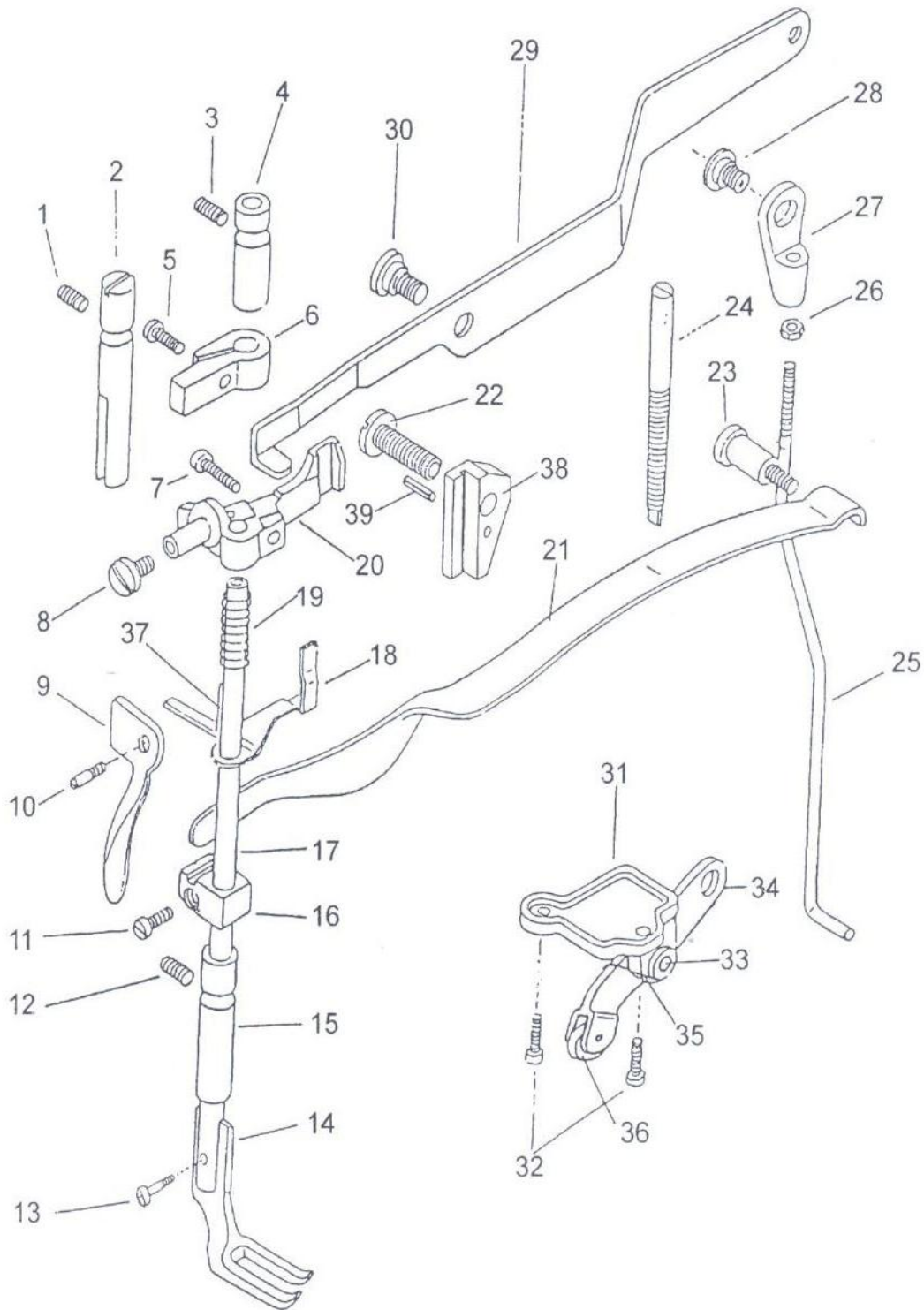
F.NEEDLE BAR FEEDING MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
F01		Crank link	1	1	1		
F02		Lifting bell crank	1	1	1		
F03		Link	1	1	1		
F04		Screw	1	1	1		
F05		Vibrating presser foot	1	1	1		
F06		Needle bar rack frame position bracket	1	1	1	1	
F07		Screw	1	1	1	1	
F08		Needle	1	1	1	1	DP×17 22#
F09		Needle bar thread guide	1	1	1		
F09		Needle bar thread guide				1	
F10		Screw	1	1	1	1	SM3/32(56)×2.5
F11		Screw	1	1	1	1	SM1/8 (44) ×4.5
F12		Needle bar	1	1	1		
F12		Needle bar complete				1	
F13		Needle bar rock frame slide block	1	1	1	1	
F14		Needle bar rock frame slide block stud	1	1	1	1	
F15		Set screw	1	1	1	1	
F16		Hinge pin	1	1	1		
F17		Screw	1	1	1	1	
F18		Screw	1	1	1	1	
F19		Needle bar rock frame rock shaft crank connect	1	1	1	1	
F20		Needle bar rock frame rock shaft crank (right)	1	1	1	1	
F21		Nut	1	1	1	1	
F22		Needle bar rock frame rock shaft	1	1	1	1	
F23		Oil wick	1	1	1		
F24		Needle bar adaptor	1	1	1		
F24		Needle bar adaptor				1	
F25		Screw	1	1	1		SM15/64(28)×10
F26		Needle bar rock frame hinge stud	1	1	1		
F27		Needle bar rock frame	1	1	1		
F28		Screw	1	1	1		
F29		Vibrating presser bar	1	1	1		
F30		Vibrating presser bar extension spring	1	1	1		
F31		Vibrating presser bar extension	1	1	1		
F32		Screw	1	1	1		
F33		Screw	1	1	1		
F34		Washer	1	1	1		
F35		Lifting eccentric connecting collar	1	1	1		
F36		Lifting eccentric connection	1	1	1		
F37		Needle bearing for lifting eccentric connection	1	1	1		
F38		Nut	1	1	1		
F39		Lifting eccentric connecting crank	1	1	1		
F40		Screw	1	1	1		

F.NEEDLE BAR FEEDING MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
F41		Lifting rock shaft bushing	2	2	2		
F42		Lifting rock shaft	1	1	1		
F43		Screw	1	1	1		
F44		Nut	1	1	1		
F45		Lifting eccentric	1	1	1	1	
F46		Needle bar rock frame rock shaft crank(left)	1	1	1	1	
F47		Set screw	2	2	2		SM11/64(40)×5.5
F48		Guide for slide block	1	1	1		
F49		Slide block	1	1	1		
F50		Screw	2	2	2		SM9/64(40)×7
F51		Screw	2	2	2		
F52		Screw	2	2	2		
F53		Stop plate	1	1	1		
F54		Washer	1	1	1	1	

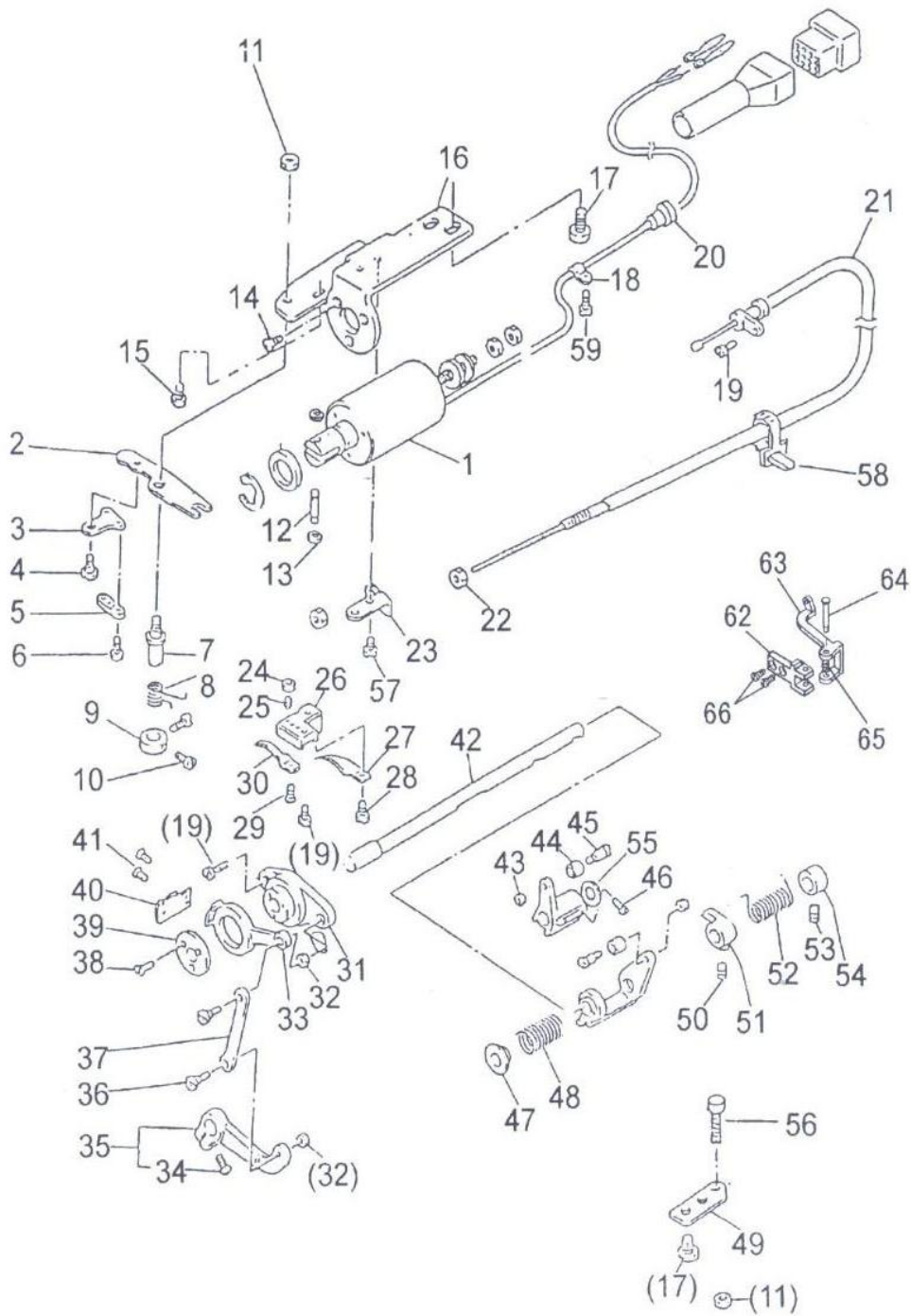
G.PRESSER FOOT MECHANISM



G.PRESSER FOOT MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
G01		Set screw	1	1	1	1	
G02		Presser bar position guide	1	1	1	1	
G03		Set screw	1	1	1	1	
G04		Presser bar bushing(upper)	1	1	1	1	
G05		Screw	1	1	1	1	
G06		Presser bar position guide bracket	1	1	1	1	
G07		Screw	1	1	1	1	
G08		Screw	1	1	1	1	
G09		Presser bar lifter	1	1	1	1	
G10		Screw	1	1	1	1	
G11		Screw	1	1	1	1	
G12		Screw	1	1	1		
G13		Screw	1	1	1	1	SM9/64(40)×6
G14		Lifting presser foot	1	1	1		
G14		Lifting presser foot complete				1	
G15		Presser bushing(lower)	1	1	1	1	
G16		Presser bar spring bracket	1	1	1	1	
G17		Presser bar	1	1	1	1	
G18		Tension release slide	1	1	1	1	
G19		Tension release spring	1	1	1	1	
G20		Presser bar lifting bracket	1	1	1	1	
G21		Presser bar spring	1	1	1	1	
G22		Screw	1	1	1	1	SM1/4(24)×20
G23		Screw	1	1	1	1	
G24		Screw	1	1	1	1	
G25		Knee lifter lifting lever connecting rod	1	1	1	1	
G26		Nut	1	1	1	1	
G27		Knee lifter lifting lever connecting rod joint	1	1	1	1	
G28		Screw	1	1	1	1	
G29		Knee lifter lifting lever	1	1	1	1	
G30		Screw	1	1	1	1	
G31		Knee lifter bell crank base	1	1	1	1	
G32		Screw	1	1	1	1	
G33		Pin	1	1	1	1	
G34		Knee lifter bell crank	1	1	1	1	
G35		Spring for knee lifter bell crank	1	1	1	1	
G36		Roller	1	1	1	1	
G37		Guide for tension release slide	1	1	1	1	
G38		Presser bar lifting bracket guide	1	1		1	
G38		Presser bar lifting bracket guide			1		
G39		Spring pin	1	1	1	1	

H.KNIFE MECHANISM



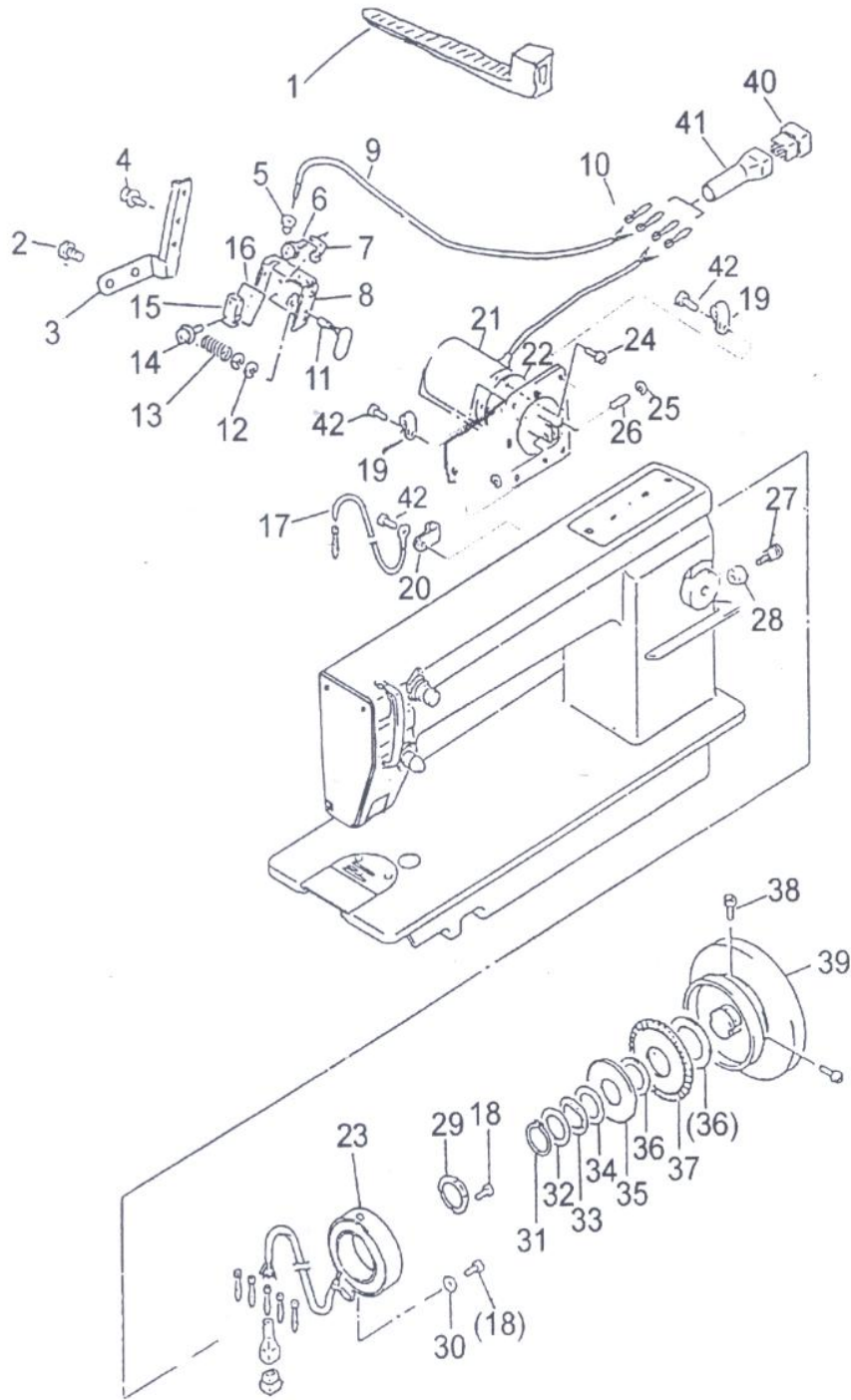
H.KNIFE MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
H01		Solenoid			1		
H02		Thread trimmer driving lever			1		
H03		Flexible wire presser			1		
H04		Screw			1		SM11/64(40)×4
H05		Flexible wire presser			1		
H06		Screw			2		SM1/8(44)×7
H07		Stud screw			1		
H08		Spring			1		
H09		Collar			1		
H10		Screw			2		
H11		Nut			1		
H12		Link stud			1		
H13		Washer			2		
H14		Screw			3		M4×6
H15		Screw			1		SM11/64(40)×10
H16		Solenoid bracket			1		
H17		Screw			4		SM15/64(28)×12
H18		Cord holder			4		
H19		Screw			1		
H20		Rubber plug			1		
H21		Flexible wire complete			1		
H22		Nut			2		M5
H23		Flexible wire base			1		
H24		Nut			2		SM9/64(40)
H25		Screw			1		SM9/64(40)×8.5
H26		Bracket for fixed blade			1		
H27		Thread finger			1		
H28		Screw			1		SM9/64(40)×8
H29		Screw			1		SM9/64(40)×5
H30		Fixed blade			1		
H31		Knife holding bracket saddle			1		
H32		Nut			2		SM11/64(40)
H33		Knife holding bracket saddle(left)			1		
H34		Screw			1		SM11/64(40)×11.4
H35		Knife driving crank			1		
H36		Screw			2		SM11/64(40)×6.2
H37		Link			1		
H38		Screw			3		SM1/8(44)×5.2
H39		Washer			1		
H40		Fixed blade			1		
H41		Screw			2		SM11/64(40)×5.5
H42		Driving crank shaft			1		
H43		Nut			2		

H.KNIFE MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
H44		Roller			2		SM15/64(28)×8.5
H45		Roller pin			2		
H46		Screw			2		
H47		Spring cover			1		
H48		Spring			1		
H49		Lever stopper plate			1		
H50		Screw			1		
H51		Stopper lever			1		
H52		Coil spring			1		
H53		Collar			1		
H54		Screw			1		
H55		Washer			1		
H56		Screw			1		
H57		Screw			2		
H58		Wire holder			1		
H59		Screw			2		
H60		Crank 1			1		
H61		Crank 2			1		
H62		Hinge pin bracket			1		
H63		Hinge pin			1		
H64		Pin			1		
H65		Spring			1		
H66		Screw			2		

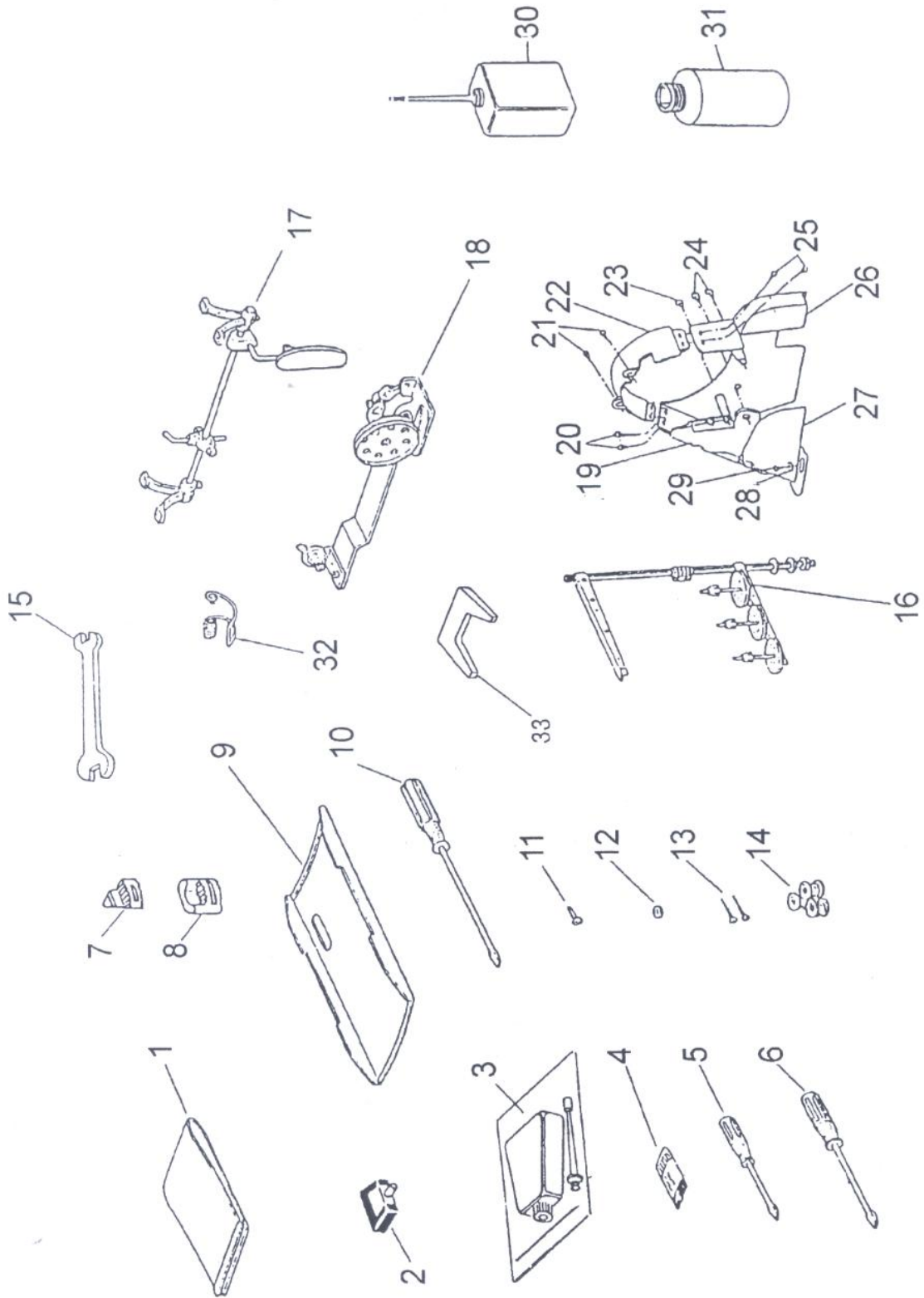
I.TOUCH BACK AND DETECTOR MECHANISM



I.TOUCH BACK AND DETECTOR MECHANISM

Fig. No.	Part No.	Description	1	2	3	4	Remarks
101		Wire holder			1		
102		Screw			2		
103		Switch bracket			1		
104		Screw			2		
105		Rubber plug			1		
106		Screw			2		
107		Plate spring			1		
108		Switch bracket			1		
109		Switch wire			1		
110		Tie-in			2		
111		Touch switch complete			1		
112		Stop ring			2		
113		Spring			1		
114		Screw			2		
115		Micro switch			1		
116		Insulator seat			1		
117		Ground wire assy.			1		
118		Screw			2		
119		Cord holder			4		
120		Cord holder			1		
121		Solenoid			1		
122		Washer			1		
123		Detector complete			1		
124		Screw			4		
125		Washer			2		
126		Link stud			1		
127		Screw			1		
128		Stop ring			1		
129		Detector bracket supporter			1		
130		Washer			1		
131		Stop ring			1		
132		Washer			1		
133		Supporter spring			1		
134		Spacer 2			1		
135		Speed command disc 2			1		
136		Spacer 1			2		
137		Speed command disc 1			1		
138		Screw			2		SM15/64(28)×12
139		Balance wheel			1		
140		Pin			1		
141		Tie-in			1		
142		Screw			3		SM11/64(40)×10

J.ACCESSORIES



J.ACCESSORIES

Fig. No.	Part No.	Description	1	2	3	4	Remarks
J01		Vinyl cover	1	1	1	1	
J02		Bed hinge connection	2	2	2	2	
J03		Oiler	1	1	1	1	
J04		Needle	1	1	1	1	DP×17 22#
J05		Screw driver(small)	1	1	1	1	
J06		Screw driver(middle)	1	1	1	1	
J07		Rubber cushion(small)	2	2	2	2	
J08		Rubber cushion(large)	2	2	2	2	
J09		Oil pan assy.	1	1	1	1	
J10		Screw driver(large)	1	1	1	1	
J11		Screw	2	2	2	2	4.5×20
J12		Washer	2	2	2	2	
J13		Nail	10	10	10	10	
J14		Bobbin			3		
J14		Bobbin	3	3		3	
J15		Spanner	1	1	1	1	
J16		Thread stand	1	1	1	1	BZ009
J17		Knee lifter assy.	1	1	1	1	
J18		Bobbin winder mechanism	1	1	1	1	
J19		Belt cover	1	1	1	1	
J20		Set screw	2	2	2	2	SM11/64(40)×8
J21		Set screw	2	2	2	2	SM11/64(40)×8
J22		Belt cover with label	1	1	1	1	
J23		Screw	1	1	1	1	M4×12.5
J24		Screw	2	2	2	2	
J25		Screw	2	2	2	2	
J26		Belt cover(lower)	1	1	1	1	
J27		Belt cover assy.	1	1	1	1	
J28		Washer	2	2	2	2	
J29		Screw	2	2	2	2	4.5×20
J30		Oiler	1	1	1	1	
J31		Oiler	1	1	1	1	
J32		Thread tension spring	1	1	1	1	
J33		Speed command disc adjusting plate			1		