

GLOBAL

EM 111

Single needle lockstitch sewing machine for
extra heavy thread to create a fancy stitch

**INSTRUCTION / OPERATING MANUAL
PARTS MANUAL**

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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	EM 111
Max. sewing speed	3000 spm
Material	Heavy
Stitch length	0-8 mm
Needle bar stroke	35 mm
Presser foot height by hand	6 mm
Presser foot height by knee	13 mm
Needle	DJ X 1

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.

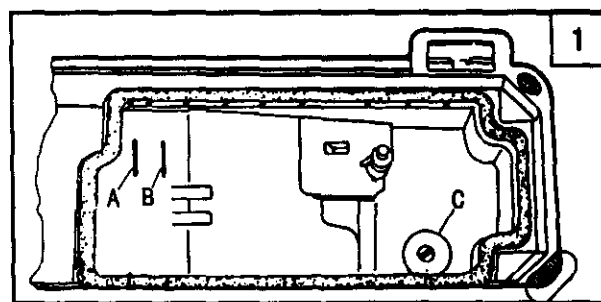
3) Oiling (Fig.1)

(1) Required amount of oil

Line (A) on the oil reservoir: Max. Oil level

Line (B) on the oil reservoir: Min. Oil level

If oil level goes down under line (B), oil cannot be distributed to each part of the machine, thus causing the parts a seizure.



(2) Replenishing

Always use only No. 18 special machine oil for high speed sewing. Be sure to replenish oil to line (A) before starting operation.

(3) Replacing oil

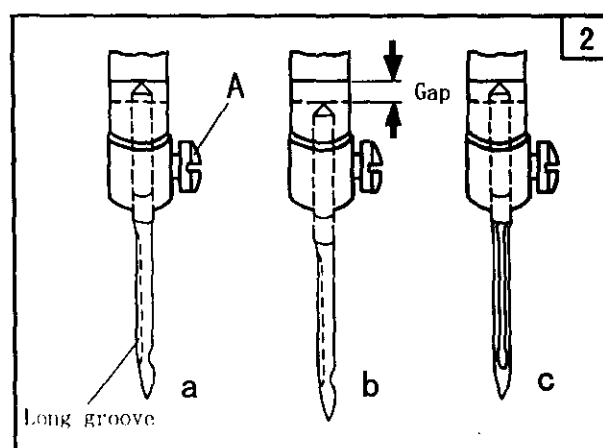
To replace oil, remove screw (C) to drain oil. After completely draining off oil, clean the oil reservoir and securely tighten screw (C), then fill the reservoir with fresh oil.

4. REPLACE NEEDLES (Fig.2)

Turn the balance wheel to lift needle bar to the upper end of its stroke. Loosen needle clamp screw (A). While keeping the long groove of the needle leftward fully insert the needle shank up to the bottom of the needle socket. Then tighten needle clamp screw (A).

Note: Fig. (b): insufficient insertion.

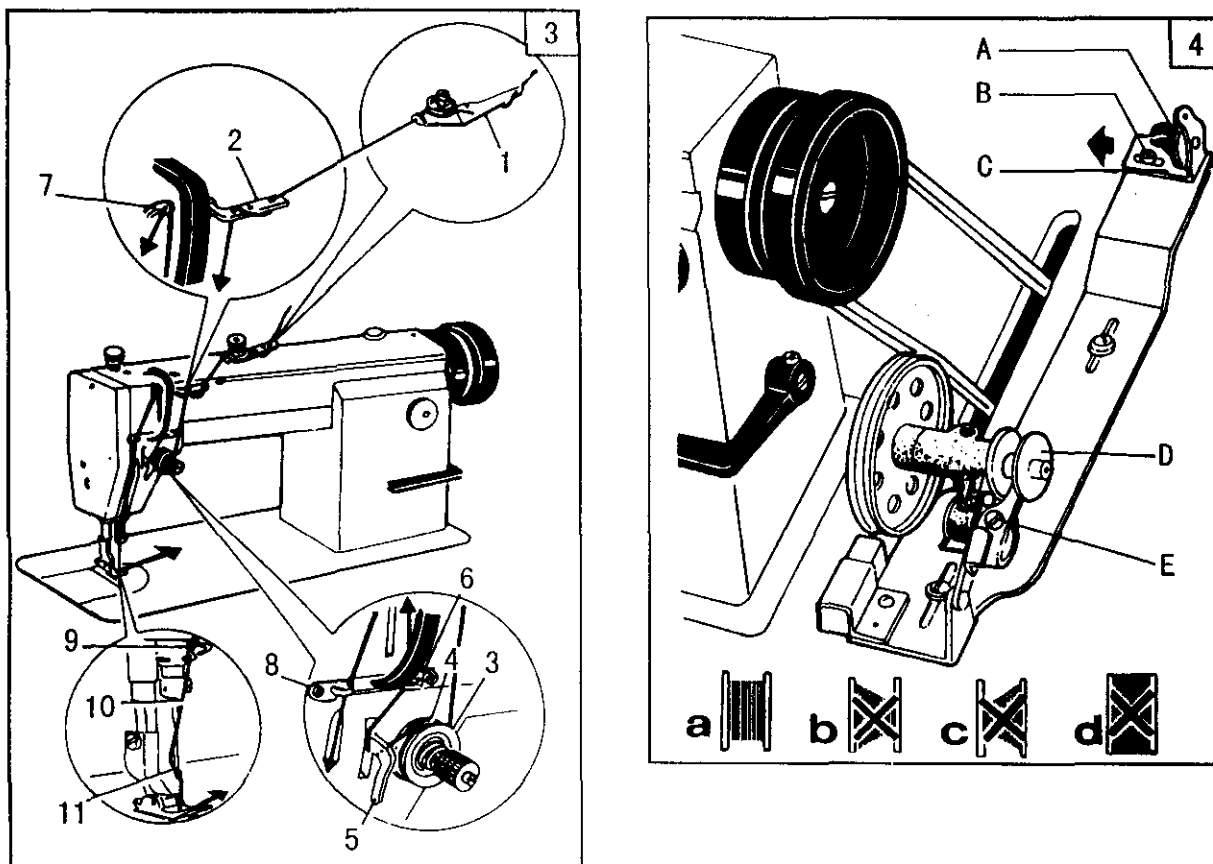
Fig. (c): wrong direction of long groove.



5. NEEDLE, THREAD AND MATERIAL TO BE SEWN

6. THREADING (Fig.3)

To thread the needle thread, raise needle bar to the upper end of its stroke, lead the thread from spool and perform threading as shown in Fig.3. To draw the bobbin thread, hold the end of the needle thread and turn the balance wheel to lower the needle bar and then to lift it to its highest position. Pull the needle thread and the bobbin thread is drawn up. Put the ends of needle thread and bobbin thread frontward under presser foot.



7. WINDING ADJUSTMENT (Fig.4)

1) The wound bobbin thread should be neat and tight, if not, adjust the winding tension by turning tension stud nut (A) of bobbin winder tension bracket.

Note: nylon or polyester thread should be wound with little tension; otherwise, bobbin (D) might break or deform.

2) When the wound thread layer does not present a cylindrical shape as shown in Fig.4 (a), loosen set screw (B) of bobbin winder tension bracket and slide bracket (C) leftward or rightward. If thread is wound as shown in Fig.4 (b), move the bracket rightward, but if thread is wound as shown in Fig.4 (c), move the bracket leftward.

After adequately positioning the bracket, tighten set screw (B).

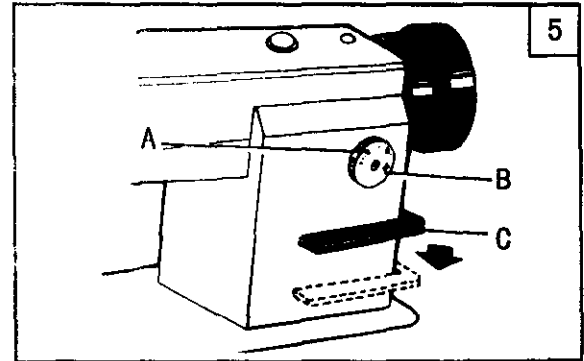
3) Do not overfill the bobbin. The optimum length of thread will fill about 80% of bobbin capacity. This can be adjusted by adjusting screw (D) of bobbin winder stop latch.

8. SET STITCH LENGTH AND REVERSE FEEDING (Fig.5)

1) Stitch length can be set by turning dial (A).

2) The figures on face (B) of dial show stitch length in mm.

3) Reverse feeding starts when reverse feed lever (C) is depressed, and the machine will feed forward again if reverse feed lever (C) is released.



9. POSITION PRESSER BAR (Fig.6)

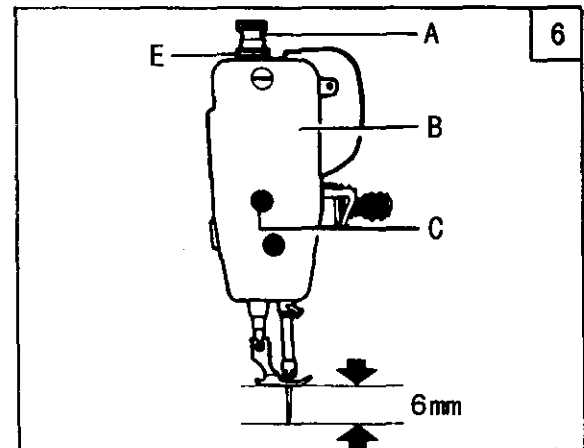
1) Loosen lock nut (E) and pressure regulating thumb screw (A).

2) Remove Rubber Plug from face plate (B).

3) Loosen screw (C) and adjust the position of Presser Bar till the presser foot is 6 mm above the throat plate will the presser foot lifted to its highest.

4) Tighten screw (C) and put in the rubber plug.

5) Tighten pressure regulating thumb screw (A) and lock nut (E).

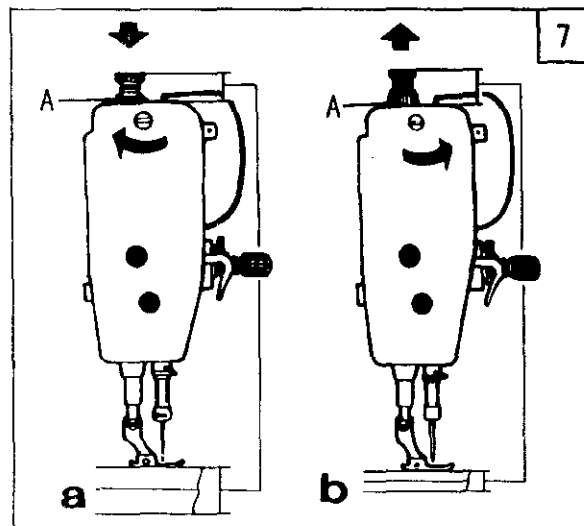


10. ADJUST THE PRESSURE OF PRESSER FOOT (Fig.7)

Pressure of presser foot is to be adjusted in accordance with thickness of materials to be sewn.

First loosen lock nut (A). For heavy materials, turn the pressure regulating thumb screw as shown in Fig.7 (a) to increase the pressure, while for light materials, turn the pressure regulating thumb screw as shown in Fig.7 (b) to decrease the pressure. Then tighten lock nut (A).

The pressure of presser foot is recommended to be less as long as normal feeding is ensured.



11. ADJUST THREAD TAKE-UP SPRING (Fig.8, 9)

1) Adjusting the thread take-up spring tension

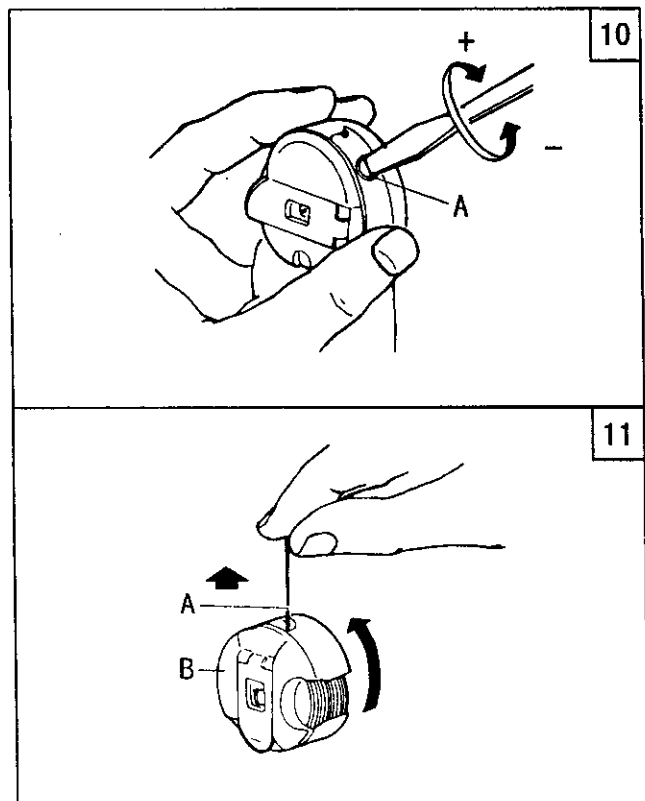
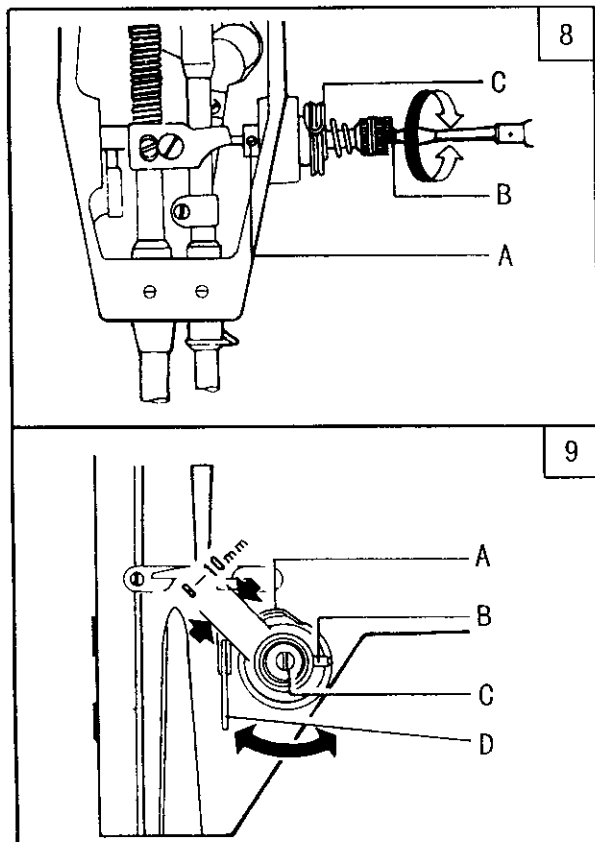
Loosen set screw (A), turn tension stud (B) clockwise to increase the spring tension, or turn the stud counter-clockwise to decrease the spring tension. After the adjustment, be sure to tighten set screw (A). The thread take-up spring tension should be about 30g. To attain this, first loosen set screw (A), turn tension stud (B) counter-clockwise to decrease the tension of thread take-up spring (C) to zero, then turn tension stud (B)

clockwise until spring (C) comes to the notch of thread tension regulating bushing, and again turn tension stud (B) halfway back (counter-clockwise) After the adjustment, tighten set screw (A).

2) Adjusting the thread take-up spring stroke

Loosen set screw (B), turn stud (C) clockwise to increase the stroke or turn stud (C) counter-clockwise to decrease the stroke. After the adjustment, tighten set screw (B).

Before leaving the factory, the thread take-up spring has properly been adjusted. Readjustment is needed only in the case of special material or special thread.



12. ADJUST THREAD TENSION (Fig.10, 11)

In principle, thread tension is to be adjusted in accordance with materials, thread and other factors.

In practice, thread tension is adjusted according to the stitches obtained. The needle thread tension should be adjusted with reference to the bobbin thread tension. Turn tension spring regulating screw (A) of bobbin case clockwise for more tension, or turn the screw counter-clockwise for less tension.

It is common practice to test the bobbin test the bobbin thread tension as shown in Fig.11. Hold the end of the thread from delivery eye. If the bobbin case is falling slowly, the proper tension is obtained. The needle thread tension can be adjusted by setting (1) the take-up spring tension, (2) the thread take-up spring stroke and (3) tension spring. All these adjustments will be described in the following.

13. ADJUST THREAD GUIDE AND THREAD TENSION (Fig.12, 13)

The position of the thread guide affects stitch tightness and therefore must be adjusted according to sewing materials and sewing conditions.

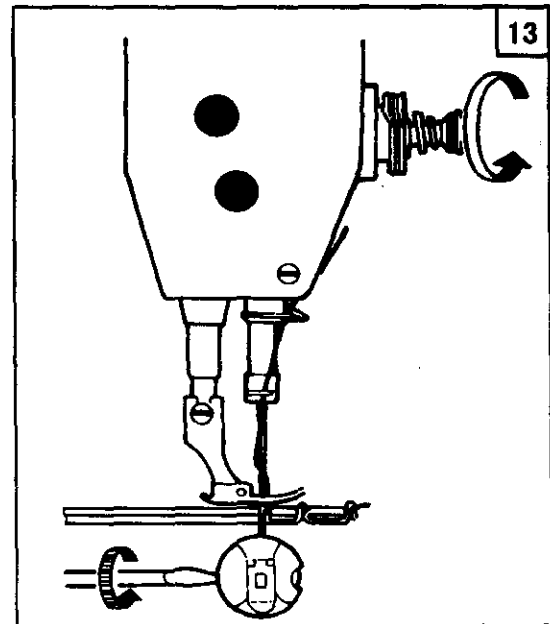
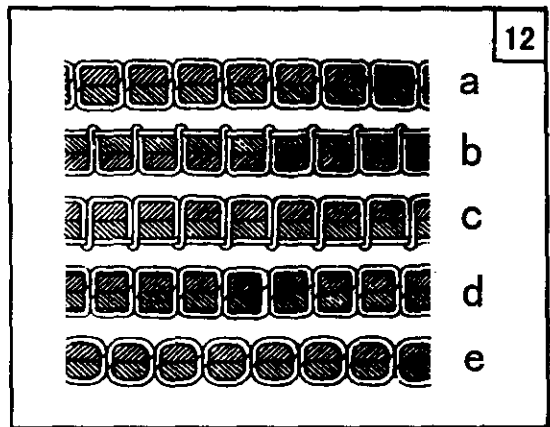
Thread guide position	1	2	3
	Leftward	Center	Rightward
Material weight	Heavy	Medium	Light

Fig.12 shows different stitch forms. Normal stitch form should be as shown in Fig.12 (a). When abnormal stitches cause puckering and thread break-age, the tension of needle thread and bobbin thread must be adjusted accordingly.

1) In case needle thread tension is too strong or bobbin thread tension is too weak, as shown in Fig.12 (b), turn the thumb nut counter-clockwise to decrease the needle thread tension, or tighten the tension spring regulating screw of bobbin case to increase the bobbin thread tension (Fig.13)

2) In case needle thread tension is too weak or bobbin thread tension is too strong, as shown in Fig.12 (c), turn the thumb nut clockwise to increase the needle thread tension, or loosen the tension spring regulating screw of bobbin case to decrease the bobbin thread tension.

3) In case of the stitch forms as shown in Fig.12 (d) and (e), adjustments can be made with reference to the above means.



14. TIME NEEDLE TO ROTAING HOOK

(Fig. 14, 15, 16, 17)

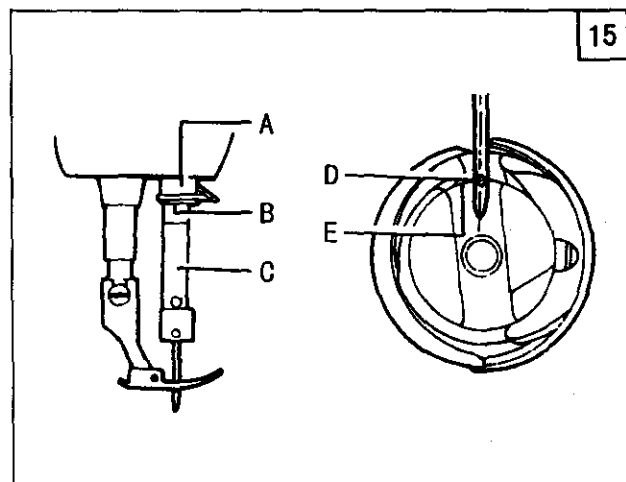
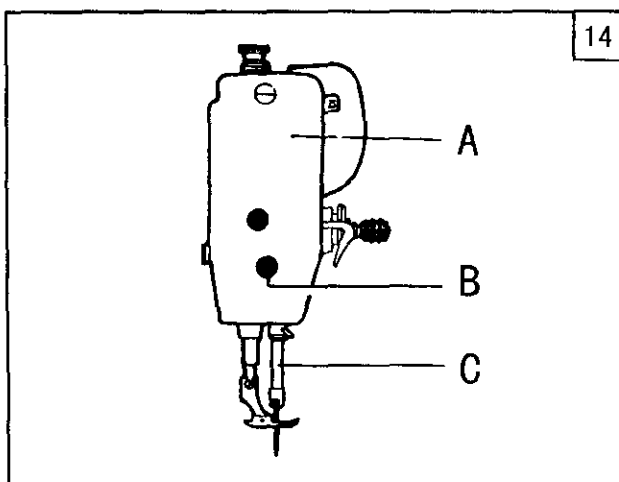
1) Adjusting the needle position (Fig.14)

(1) Turn balance wheel by hand to bring needle bar (C) to the lowest position of its stroke.

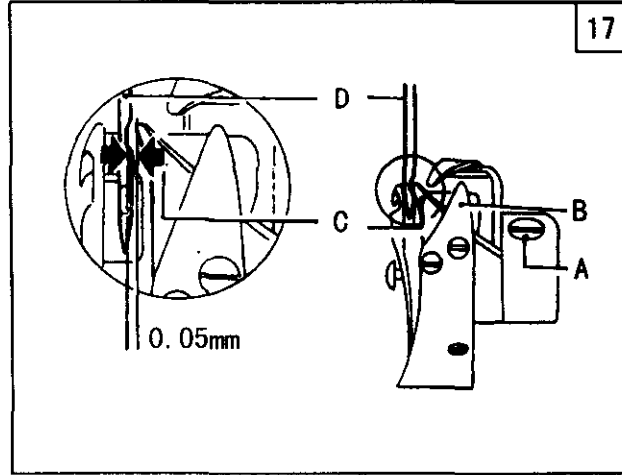
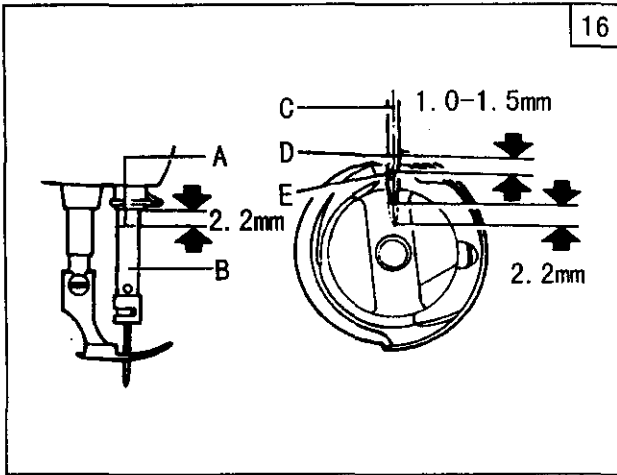
(2) Remove rubber plug from face plate (A).

(3) Loosen set screw (B) of needle bar adaptor.

(4) Move needle bar (C) vertically to adjust needle timing.



(5) After the adjustment, tighten set screw (B) and put in the rubber plug. The standard needle timing (Fig.15) is to align timing mark (B) on the needle bar and the bottom of needle bar bushing (A) and meanwhile align the inner surface (E) of the hook and the center of needle eye (D) when the needle bar gets down to its lowest position.



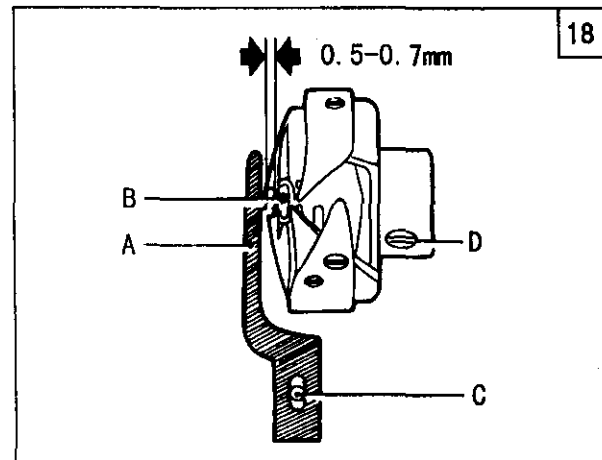
2) Adjusting the hook point timing

Timing of needle motion to rotating hook motion has a great effect on sewing performance. The standard hook point timing (Fig.16) is to align hook point (D) and needle centerline (C) when needle bar (B) is lifted by 2.2mm from the lower end of its stroke. Besides, hook point (D) should be 1.0-1.5mm above the upper end of needle eye (E).

When adjusting the hook point timing, also notice that the clearance between the bottom of needle notch and hook point (C) should be approx. 0.05mm (Fig.17)

15. REPLACE ROTATING HOOK (Fig.18)

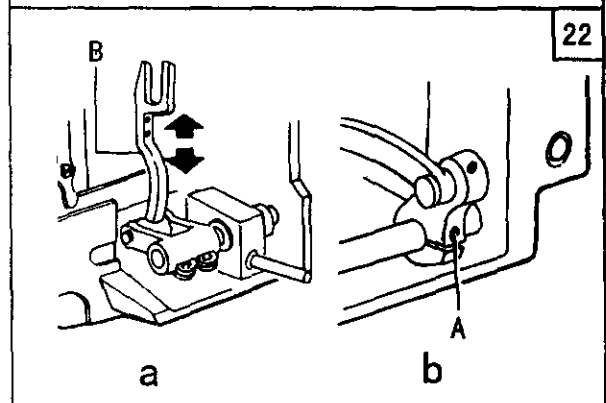
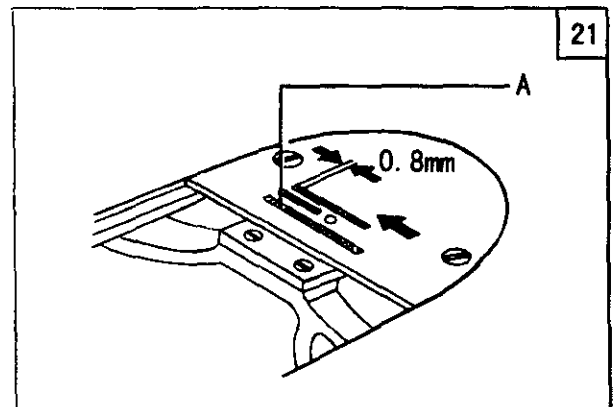
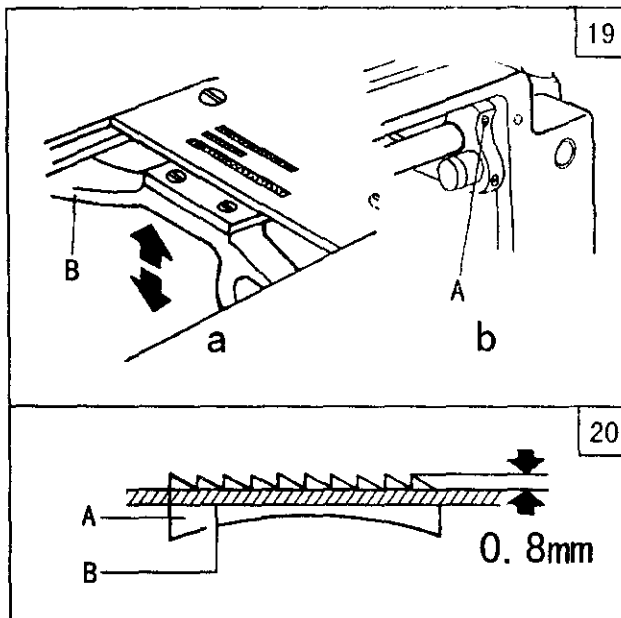
- 1) Lift needle bar to the highest position of its stroke.
- 2) Remove throat plate, take down needle and bobbin case.
- 3) Loosen screw (C) of hook positioner and take down hook positioner (A).
- 4) Loosen two screw (D) of rotating hook.
- 5) Turn the balance wheel to raise feed bar to its highest position, then take down the rotating hook by turning it away from feed bar.
- 6) Installing the hook can be done in reverse sequence. Note that needle (B) and the convex surface of hook positioner (A) should align with a clearance of 0.5-0.7mm between them.



16. ADJUST THE HEIGHT OF FEED DOG (Fig.19, 20)

- 1) Turn the balance wheel until feed dog is lifted to its highest position from throat plate surface.

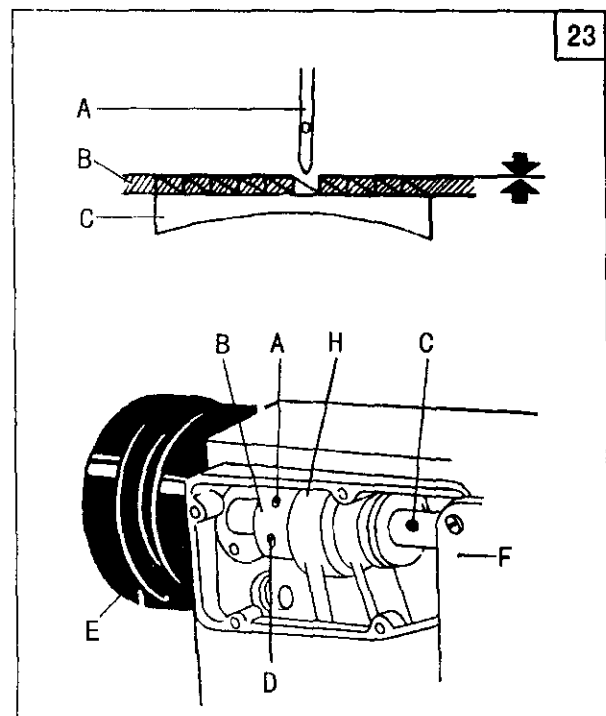
- 2) Loosen screw (A) of feed lifting rock shaft crank right (See Fig.19, b)
- 3) Move feed bar (B) in the direction shown by the arrow in Fig.19 (a) to adjust the height of the feed dog.
The standard height of feed dog is that the top of feed dog is 0.8mm above throat plate surface (B).
- 4) After the adjustment, be sure to tighten screw (A).



17. ADJUST THE POSITION OF FEED DOG (Fig.21, 22)

The standard position of feed dog is that the clearance between the front end of the throat plate slot and the first tooth of the fully advanced feed dog is 0.8 mm, as shown in Fig.21.

- 1) Fully advance the feed dog toward the front end of the throat plate slot.
- 2) Loosen feed rock shaft crank screw (A). See Fig.22 (b).
- 3) Move feed bar (B) in the direction shown by the arrow in Fig. 22 (a) to adjust the feed dog position.
- 4) After the adjustment, be sure to tighten Screw (A).

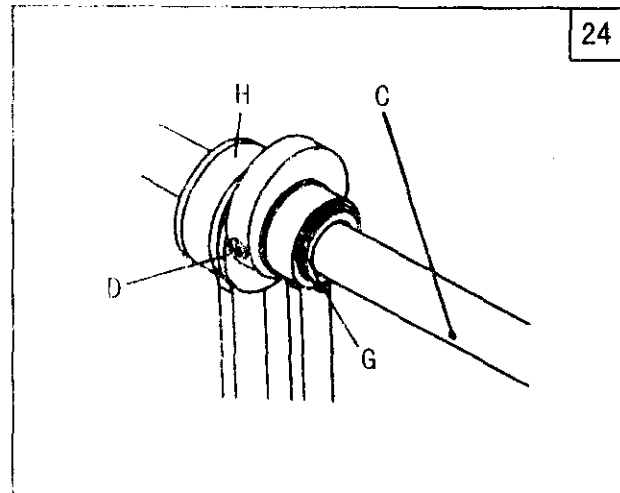


18. TIME FEED MOTION TO NEEDLE MOTION (Fig.23, 24)

The standard timing of feed motion to needle motion is that the top of feed dog (C) is flush with throat plate surface (B) when the point of needle (A) reaches throat plate surface (B). (Fig.23.)

If feed motion is not timed to needle motion, adjust as follows (Fig.23 and Fig.24).

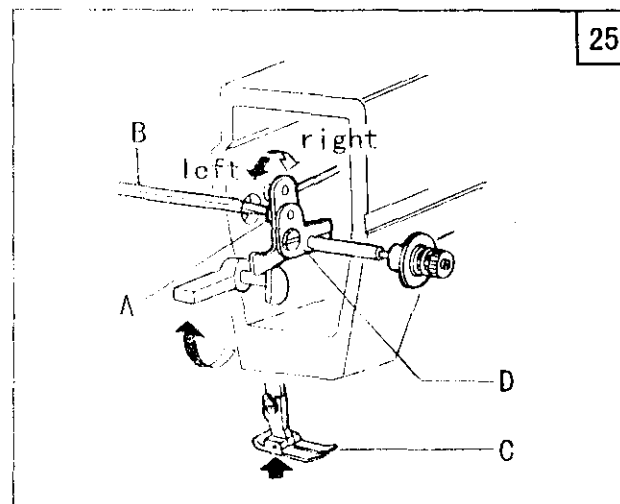
- 1) Remove arm side cover (F).
- 2) Loosen set screws (A) and (D) of feed and feed lifting eccentric.
- 3) Hold feed and feed lifting eccentric (B) and turn balance wheel (E) slowly until the upper edge of arm shaft oil hole (C) aligns with the lower edge of reference hole (G) of feed and feed lifting eccentric.
- 4) Leave a clearance of 0.3-0.5mm between feed and feed lifting eccentric (B) and eccentric sleeve (H), then tighten set screws (A) and (D).



19. ADJUST OPENING TIME OF THE TENSION DISCS (Fig.25)

Within the presser foot lift range of 2-7mm opening time of the tension discs can be adjusted as follows:

- 1) Remove the rubber plug from the back of arm and loosen screw (A) of knee lifter lever (left).
- 2) Move the tension releasing cam leftward for earlier opening or rightward for later opening. It will facilitate the adjustment to put under the presser foot a block as thick as the presser foot lift.

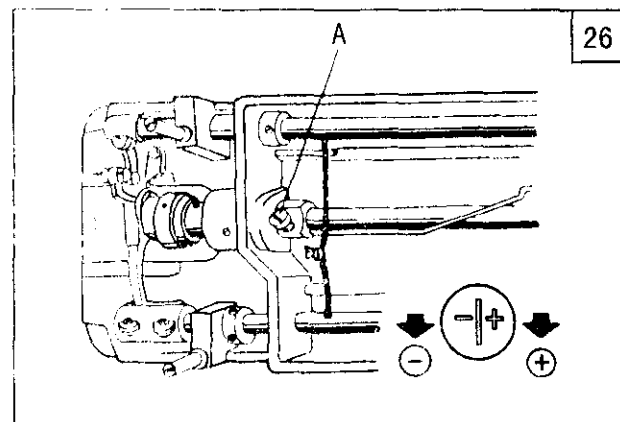


20. LUBRICATION ADJUSTMENT (Fig.26)

Adjusting the lubrication of rotating hook.

Oil adjusting screw (A) can adjust the lubrication of the rotating hook as follows:

- (1) Turn oil adjusting screw (A) clockwise to increase oil and turn oil adjusting screw (A) counter-clockwise to decrease oil.
- (2) Oil adjusting screw (A) adjusts oil amount within 5 turns. When oil adjusting screw (A) is fully tightened, oil amount is maximum.
- (3) Readjustment depends on temperature, sewing speed and the like. In practice, oil amount can be judged as follows: remove the throat plate and place a piece of paper on instead, run the machine for about 20 seconds, then check the oil splashed on the paper.



21. REGULAR CLEANING (Fig.27)

1) Cleaning feed dog

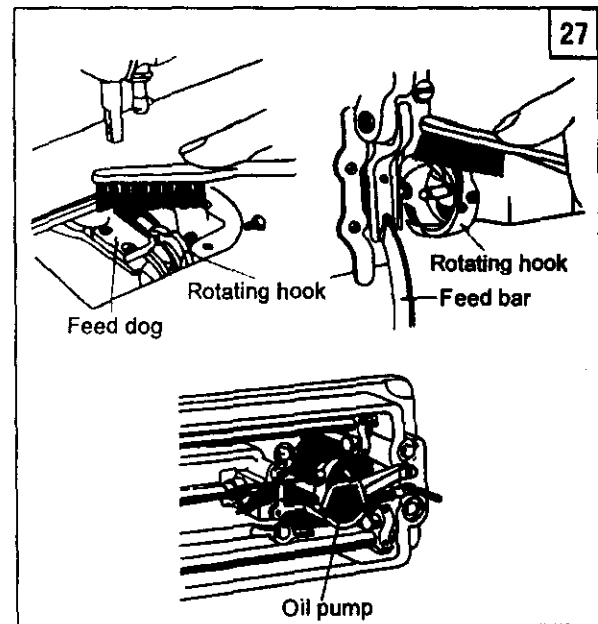
Remove the throat plate and clear off the dust and lint between feed dog tooth slots.

2) Cleaning rotating hook

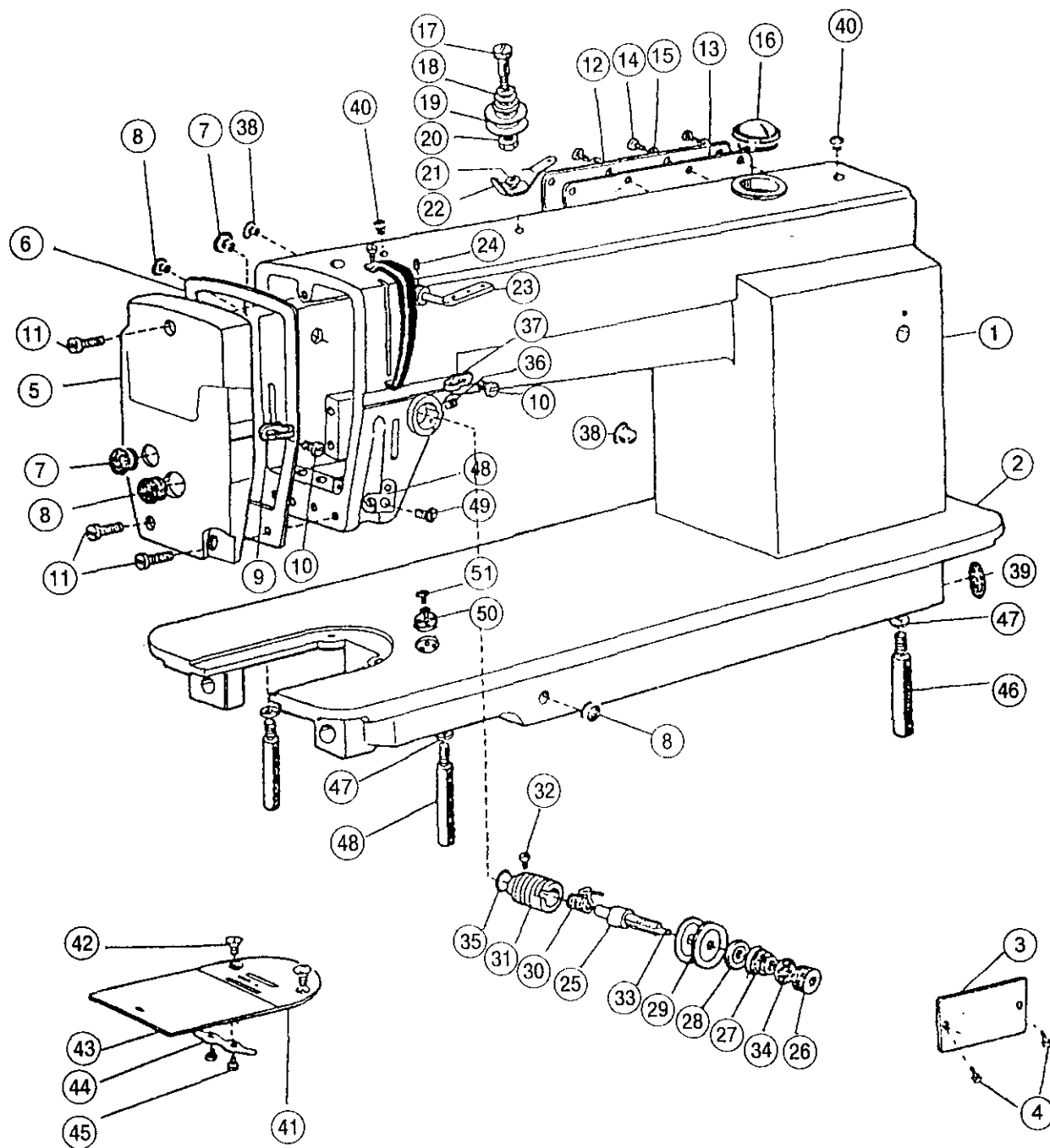
Swing out the machine head and clean the hook. Wipe the bobbin case with soft cloth.

3) Cleaning oil pump, screen

Swing out the machine head and clear off the dust and dirt on oil pump screen.



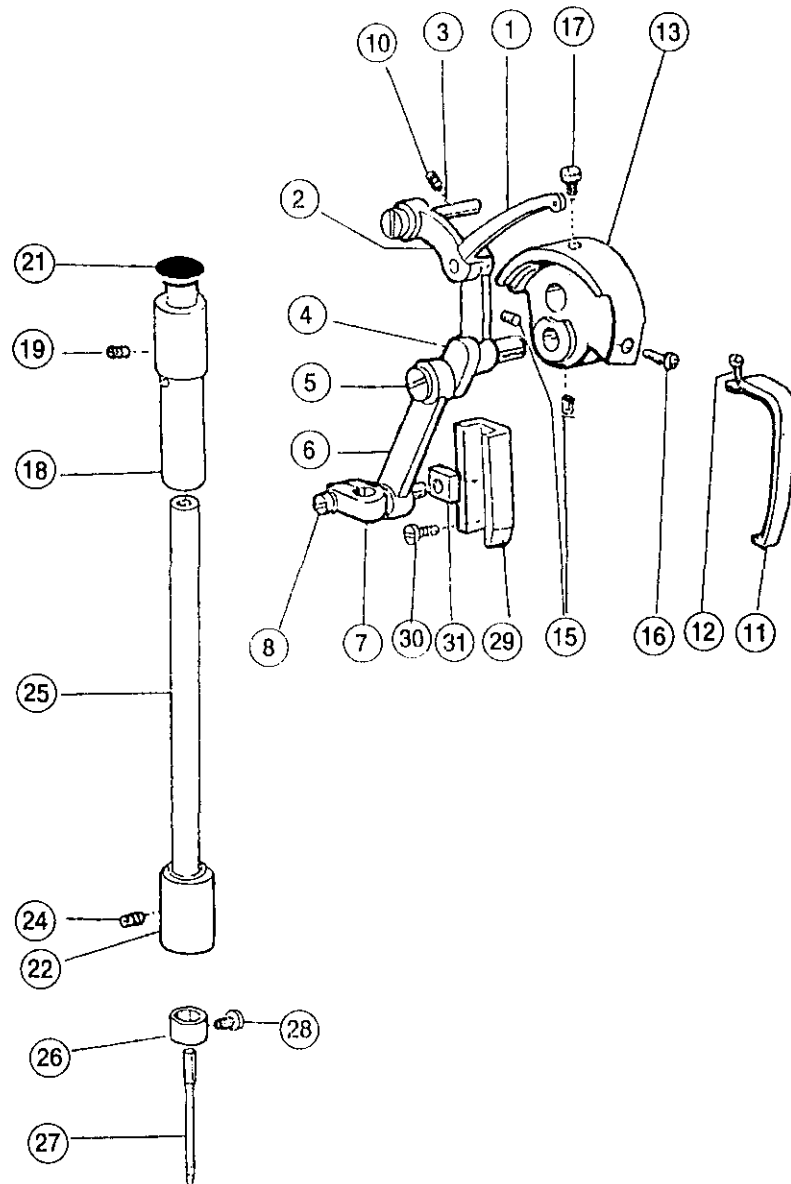
1. ARM BED AND ITS ACCESSORIES



1. ARM BED AND ITS ACCESSORIES

1	11H1-001A1	Machine head	1
2	11H1-001A2	Bedplate	1
3	11H1-001B2	Trademark plate	1
4	GB827-86	Rivet	4
5	54T1-005	Face plate	1
6	54T1-002B2	Gasket	1
7	72T1-004C3	Rubber plug Ø 19	1
8	72T1-004C4	Rubber plug Ø 11,8	1
9	74T1-004C1	Thread guide	1
10	22T1-006C6	Thread guide screw	1
11	72T1-016	Screw	3
12	22T1-005D1	Arm size cover	1
13	22T1-005D2	Gasket	1
14	72T1-017	Screw	8
15	22T1-007	Washer	8
16	72T1-006E	Oil check window	1
17	22T1-009E1	Tension stud	1
18	22T1-009E2	Spring for pre-tension	1
19	22T1-009E3	Tension disc	2
20	22T1-009E4	Spacer	1
21	GB896-76	Stop ring	1
22	22T1-009E5	Pre-tension thread guide	1
23	22T1-010	Thread guide	1
24	22T1-011	Set screw	1
25	22T1-012F1	Tension stud	1
26	72T1-007F1	Tension nut	1
27	22T1-012F3	Tension spring	1
28	72T1-007F2	Disc	1
29	72T1-007F5	Tension disc	2
30	73T1-002C2	Thread take-up spring	1
31	72T1-007F3	Thread tension regulating bushing	1
32	22T1-012F8	Set screw	1
33	22T1-012F9	Tension release pin	1
34	22T1-012F10	Lock washer	1
35	22T1-012F11	Rubber ring	1
36	72T1-008	Set screw	1
37	74T1-005	Thread guide	1
38	72T1-009	Rubber plug Ø 8,8	2
39	72T1-010	Rubber plug Ø 2,7	1
40	72T2-011	Rubber plug Ø 5,7	2
41	11H1-006	Needle plate	1
42	72T1-019	Needle plate screw	2
43	22T1-021G1	Slide plate	1
44	22T1-021G2	Slide plate spring	1
45	22T1-021G3	Screw	2
46	22T1-022	Leg	3
47	GB93-76	Spring washer	2
48	73T2-006	Thread guide	1
49	73T2-007	Screw	1
50	72T1-014	Cloth guide plate	1
51	T2T1-013	screw	2

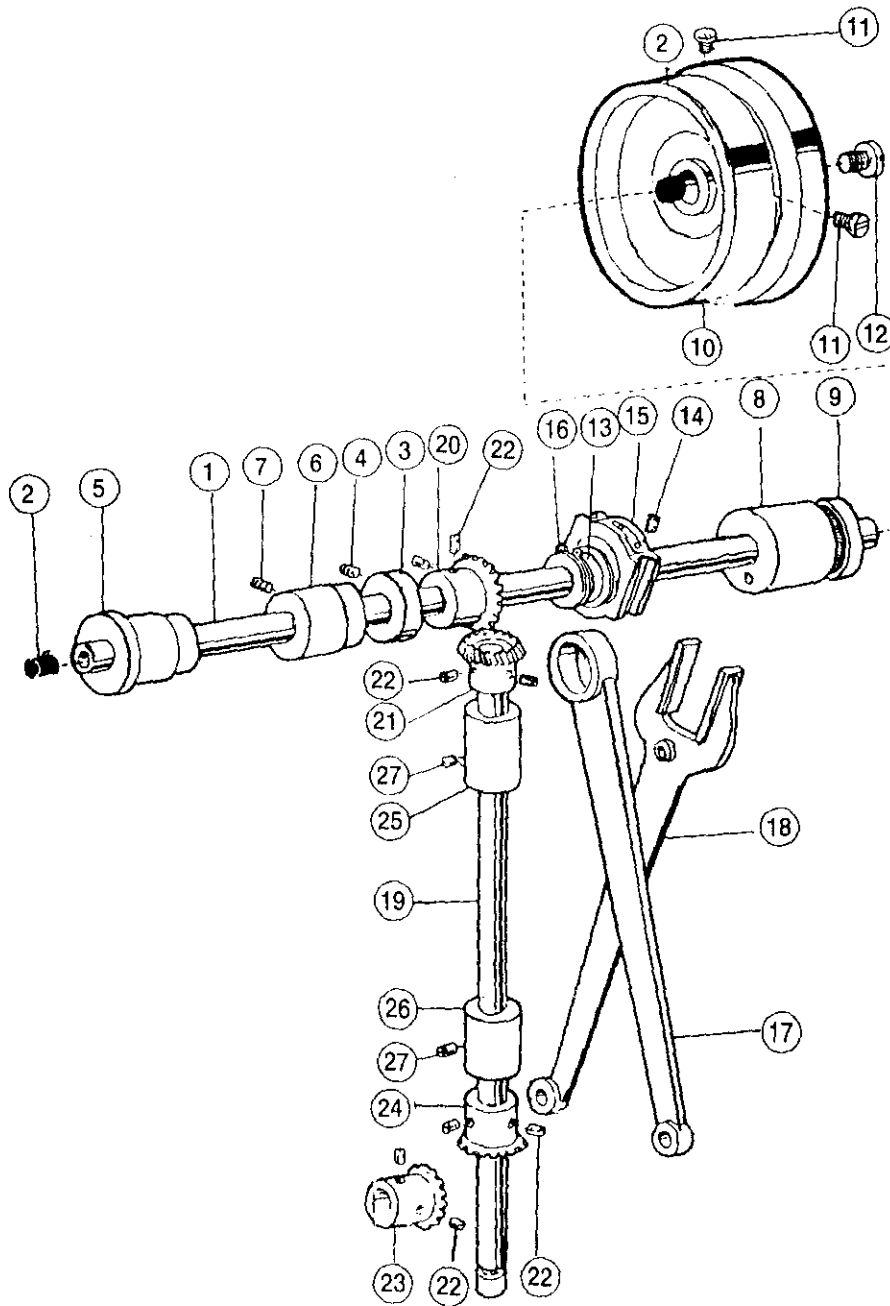
2. SEWING MECHANISM



2. SEWING MECHANISM

1	11H2-001A1a1	Thread take-up lever	1
2	11H2-001A1b1	Thread take-up lever link	1
3	22T2-001A3	Hinge pin	1
4	73T2-001A1	Thread take-up crank	1
	22T2-001A5	Needle bearing	2
5	22T2-001A6	Screw	1
6	22T2-001A3	Needle bar link	1
7	22T2-001A8	Needle bar adaptor	1
8	22T2-001A9	Set screw	1
10	22T2-002	Set screw	1
11	74T2-002	Thread take-up guard	1
12	72T2-003	Screw	1
13	72T2-004B1	Needle bar crank	1
15	72T2-004B2	Set screw	2
16	22T2-006	Set screw	1
17	22T2-007	Set screw	1
18	22T2-008	Needle bar bushing upper	1
19	22T2-009	Set screw	1
21	72T2-005	Rubber plug	1
22	73T2-005	Needle bar bushing lower	1
24	22T2-013	Set screw	1
25	74T2-004	Needle bar	1
26	73T2-003	Thread guide for needle bar	1
27	73T2-004	Needle	1
28	22T2-017	Needle clamp screw	1
29	22T2-018	Guide for slide block	1
30	22T2-019	Screw	2
31	22T2-020	Slide block	1

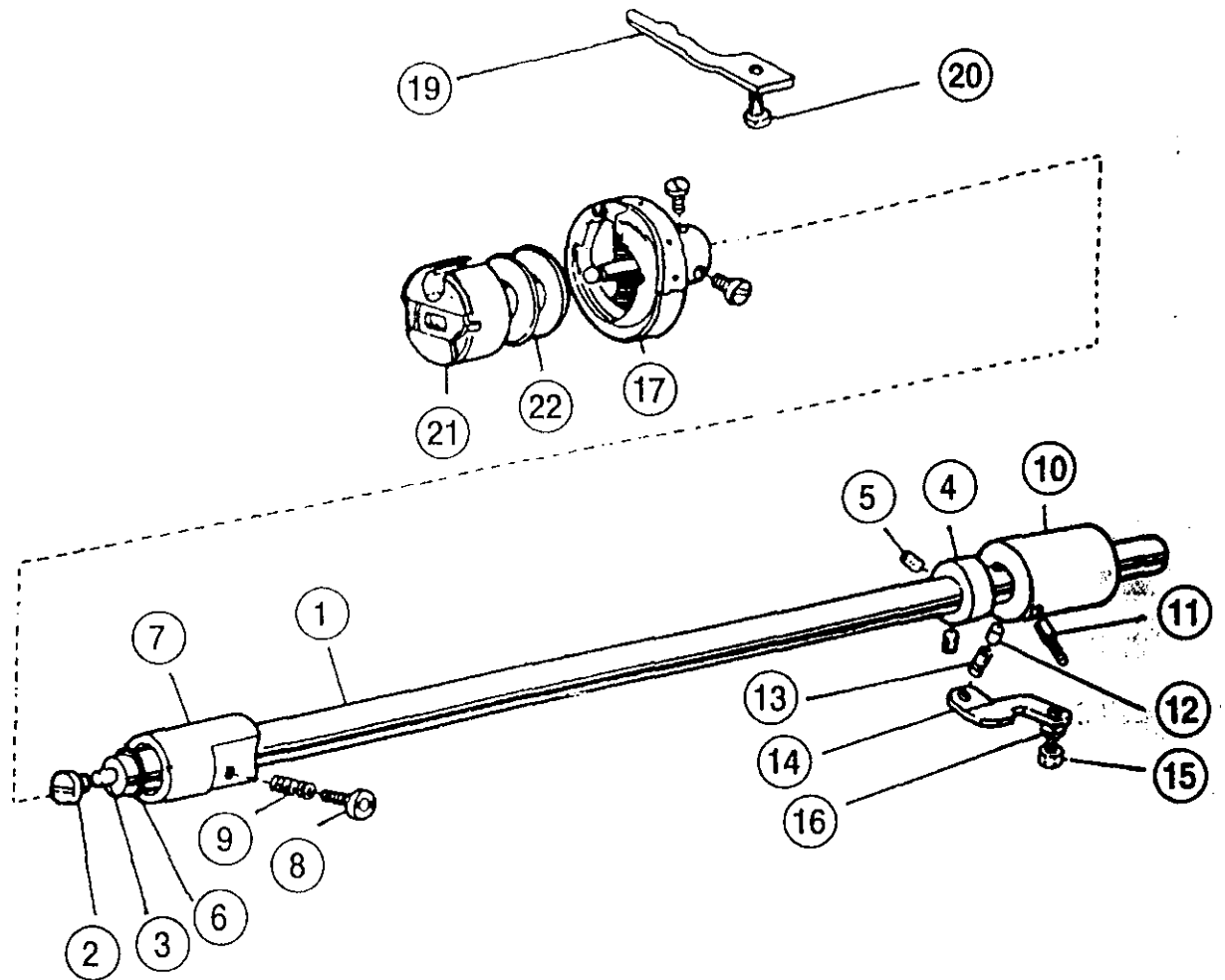
3. SEWING MECHANISM



3. SEWING MECHANISM

1	72T3-001A1	Arm shaft	1
2	22T3-001A2	Plug Ø 7,4 x 10	2
3	22T6-005B1	Collar	1
4	22T3-002B2	Set screws	2
5	22T3-003	Arm shaft bushing (left)	1
6	22T3-004	Arm shaft bushing (middle)	1
7	22T2-002	Set screws	1
8	22T3-005	Arm shaft bushing (right)	1
9	22T3-006F	Oil seal	1
10	11H3-001A1	Handwheel	1
11	22T3-007C2	Set screws	2
12	22T3-008	Screw	1
13	11H3-002B1a1	Feed lifting eccentric	1
14	72T3-005D1a3	Set screw	2
15	72T3-005D1a2	Eccentric sleeve	1
16	22T3-009D1b	Retaining ring	1
17	22T3-009D1c	Crank rod	1
18	73T3-010A1	Feed forked connection	1
19	22T3-010E2a1-2	Vertical shaft	1
20	22T3-010E1a2-2	Bevel gear for arm shaft	1
21	22T3-010e2a2-2	Bevel gear for vertical shaft (upper)	1
22	22T2-005B3	Set screws	8
23	22TD-010E1b-2	Bevel gear for hook shaft	1
24	22T3-010E2b-2	Bevel gear for vertical shaft (lower)	1
25	22T3-011	Vertical shaft bushing (upper)	1
26	74T3-001	Vertical shaft bushing (lower)	1
27	22T2-002	Set screws	2

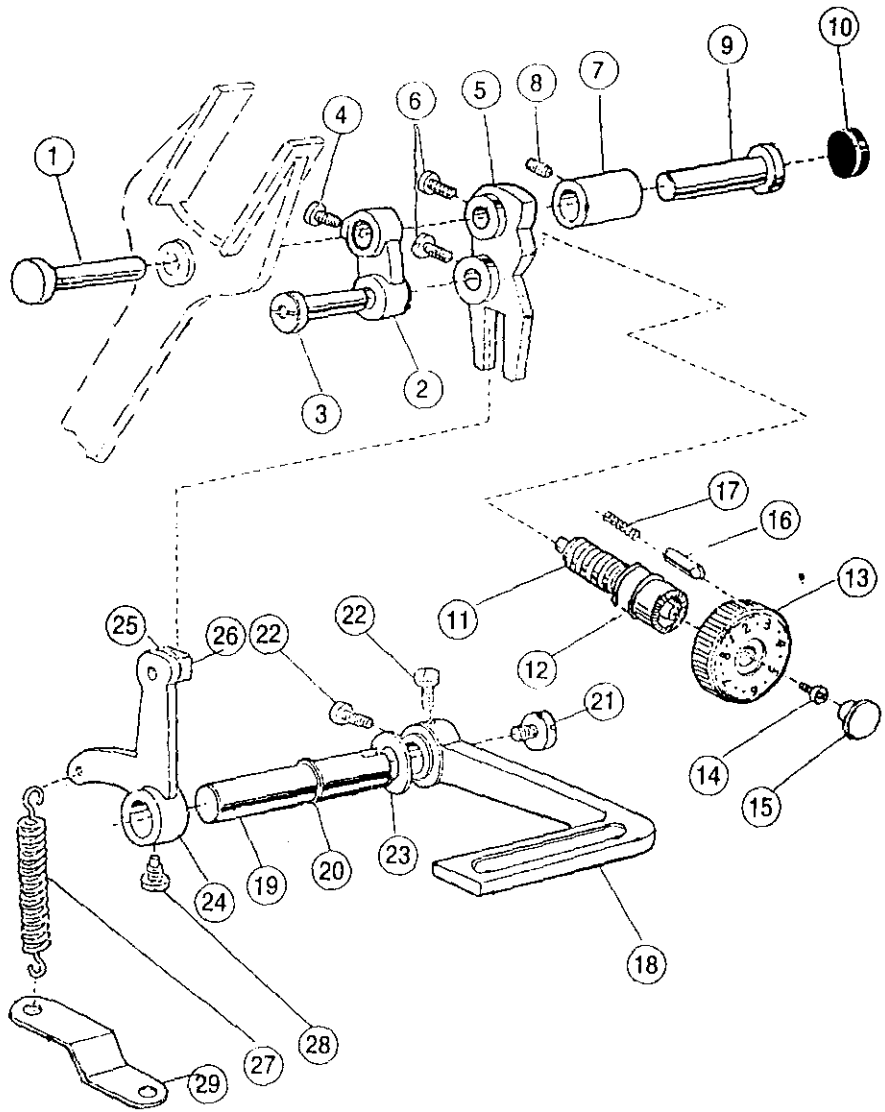
4. ROTATING HOOK MECHANISM



4. ROTATING HOOK MECHANISM

1	74T-001A1	Rotating hook shaft	1
2	22T4-001A1a1	Filter screw	1
3	72T4-001A1a2	Filter	1
4	72T4-002B1	Collar	1
5	72T4-002B2	Set screw	2
6	22T4-003G	Oil seal	1
7	22T4-004	Hook shaft bushing (left)	1
8	72T4-003	Oil adjusting screw	1
9	22T4-006	Spring	1
10	72T4-008C1	Hook shaft bushing (right)	1
11	22T4-007C2	Set screw	1
12	72T4-010	Plunger	1
13	72T4-011	Plunger spring	1
14	74T4-002	Guide plate	1
15	22TF-001A4	Guide screw	1
17	11H4-002B	Rotating hook	1
18			2
19	74T4-004	Rotating hook positioner	1
20	22T4-005	Screw	1
21	74T4-005C	Bobbin case	1
22	11H4-001	bobbin	1

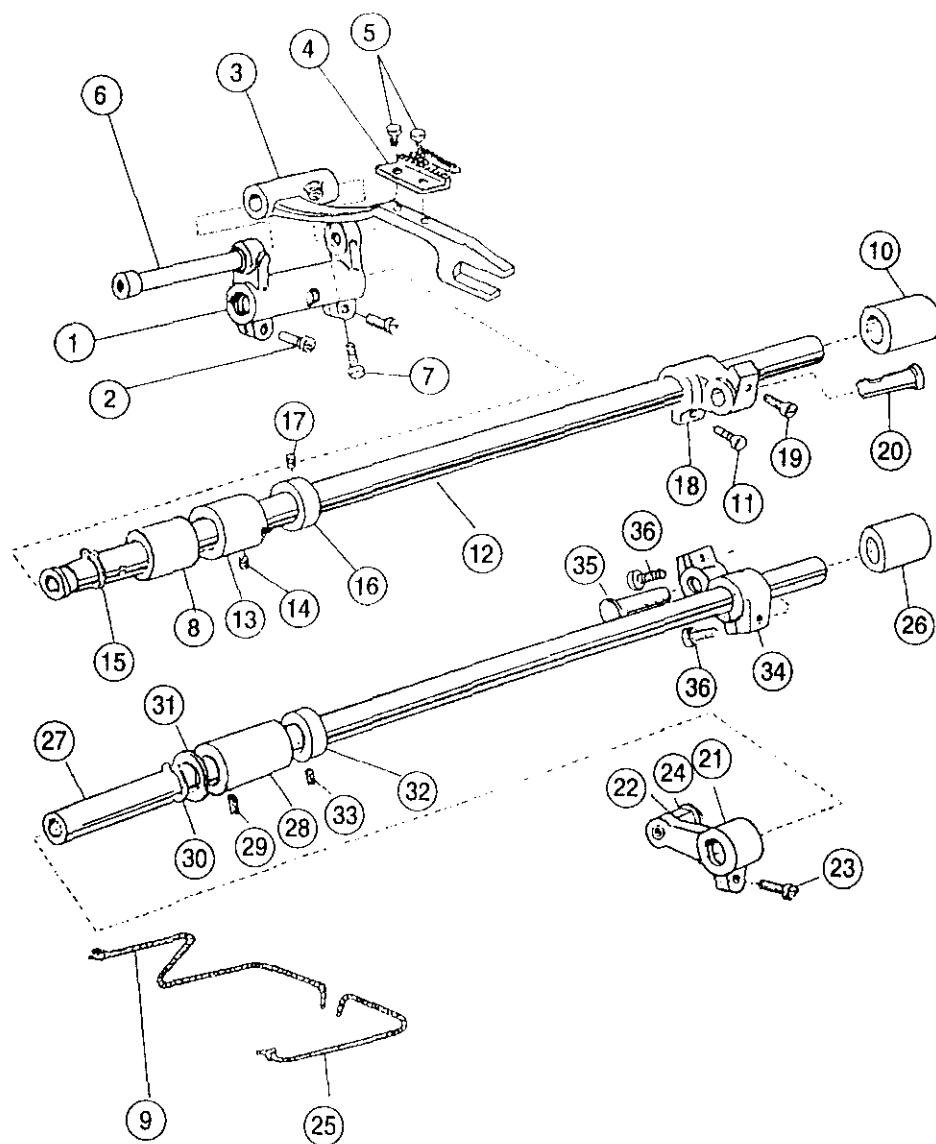
5. STITCH REGULATOR MECHANISM



5. STITCH REGULATOR MECHANISM

1	22T5-001A1	Hinge pin	1
2	22T5-001A2	Feed connecting link	1
3	22T5-001A3	Hinge pin	1
4	22T5-001A4	Set screw	1
5	72T5-002B1	Feed regulator	1
6	22T5-001D4	Set screw	2
7	72T5-002	Feed regulator bushing	1
8	22T5-002	Sew screw	1
9	22T5-004	Hinge pin	1
10	72T5-003	Rubber plug	1
11	73T5-003C1	Feed regulator screw	1
12	22T5-006C4	O-ring	2
13	11H5-001A1	Dial	1
14	22T5-006C3	Screw	1
15	22T5-005	Rubber plug	1
16	22T5-008	Stopper pin	1
17	22T5-009	Spring	1
18	72T5-006C1	Reverse feed lever	1
19	22T5-010D2a	Reverse feed lever shaft	1
20	22T5-010D2b	O-ring	1
21	22T5-010D3	Screw	1
22	22T5-001A4	Screw	2
23	22T5-011	Washer	1
24	22T5-012E1	Reverse feed crank	1
25	22T5-012E1a1	Slide block pin	1
26	22T5-012E1a2	Slide block	1
27	22T5-012E2	Spring	1
28	22T5-013	Screw	1
29	22T5-014	Bracket for spring	1

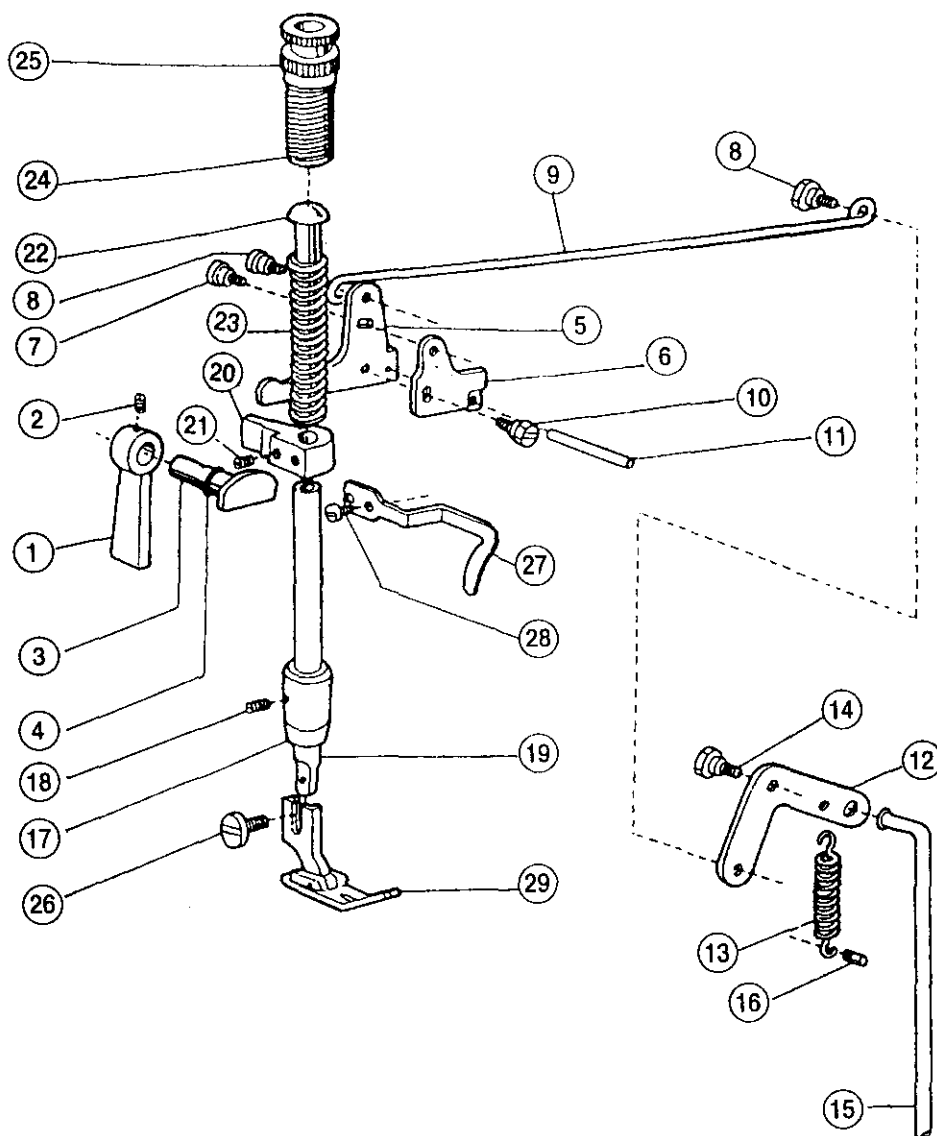
6. FEEDING, FEED LIFTING & LOWER SHAFT MECHANISM



6. FEEDING, FEED LIFTING & LOWER SHAFT MECHANISM

1	72T6-001A1	Feed bar crank	1
2	72T6-001A6	Screw	2
3	20H11-001B1	Feed bar	1
4	22T6-001A3	Feed dog	1
5	22T6-001A4	Screw	2
6	11H6-004	Shaft for feed bar	1
7	22T2-019	Screw	1
8	11H6-007	Bushing	1
9	72T6-001A5	Oil wick	1
10	11H6-006	Bushing	1
11	2T5-001A4	Screw	1
12	11H6-001	Feed rock shaft	1
13	22T6-004	Bushing	1
14	72T4-002B2	Set screw	1
15	GB894-76	Retaining ring	1
16	22T6-005B1	Collar	1
17	22T3-002B2	Set screw	2
18	11H6-002A1	Feed rock shaft crank	1
19	22T6-001A1b	Screw	1
20	73T6-002	Hinge pin	1
21	72T6-002B1a	Lever	1
22	72T6-002B1b	Slide block pin	1
23	22T6-008D3	Screw	1
24	72T6-007D1a	Slide block	1
25	72T6-002B4	Oil wick	1
26	11H6-010	Bushing	1
27	54T6-002	Feed lifting rock shaft	1
28	22T6-012	Bushing	1
29	22T2-002	Screw	1
30	GB894-76	Retaining ring	1
31	22T6-013	Washer	1
32	22T6-005B1	Collar	1
33	22T3-002B2	Set screw	2
34	72T6-003C1	Feed lifting rock shaft crank	1
35	22T6-007	Hinge pin	1
36	22T6-001A1b	screw	2

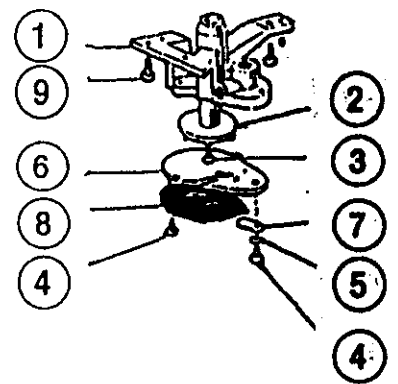
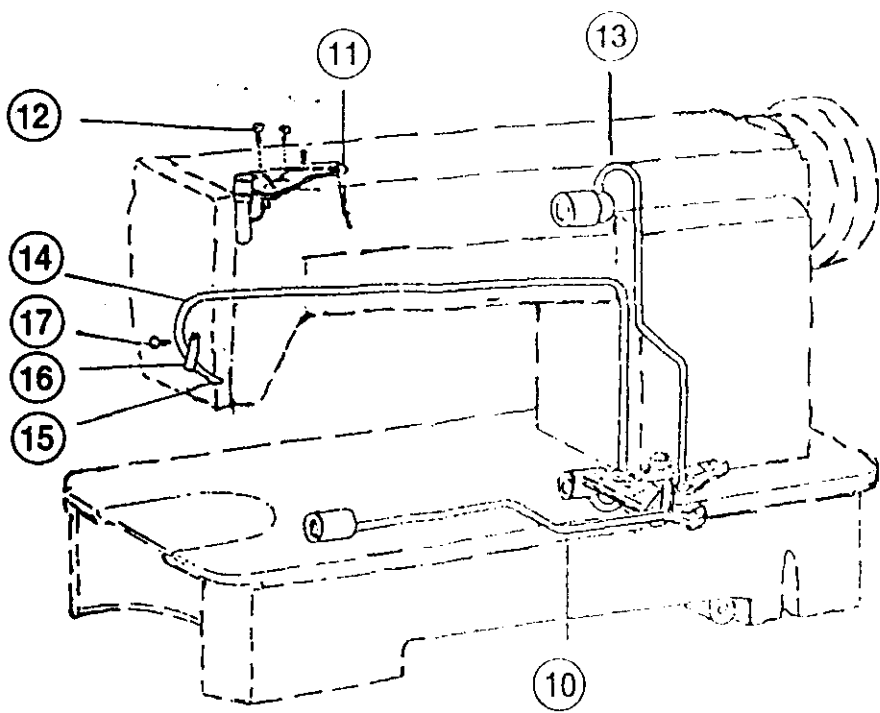
7. PRESSER FOOT MECHANISM



7. PRESSER FOOT MECHANISM

1	72T7-010F1	Presser bar lifter	1
2	22T1-011	Set screw	1
3	72T7-001A1	Presser bar lifter cam	1
4	72T7-008	O-ring	1
5	22T7-004B1a	Knee lifter lever (left)	1
6	72T7-002B1-1	Tension release cam	1
7	22T7-004B1c	Screw	1
8	22T7-004B2	Screw	2
9	22T7-004B3	Knee lifter rod	1
10	22T7-005	Screw	1
11	22T7-006	Tension release pin	1
12	22T7-007C1	Knee lifter lever (right)	1
13	22T7-007C2	Spring	1
14	22T7-005	Screw	1
15	72T7-003C1	Knee lifter connecting rod	1
16	22T7-008	Pin	1
17	72T7-009	Presser bar bushing	1
18	22T2-013	Set screw	1
19	20H8-002A	Presser bar	1
20	72T7-004C1	Presser bar lifting bracket	1
21	72T3-005D1a3	Screw	1
22	22T7-012	Presser bar spring guide	1
23	11T7-002	Spring	1
24	20H8-002A	Pressure regulating thumb screw	1
25	22T7-014E2	Lock nut	1
26	22T7-015	Presser foot screw	1
27	72T7-012	Upper thread guide	1
28	22T7-005	Screw	1
29	11H7-001A	Presser foot	1

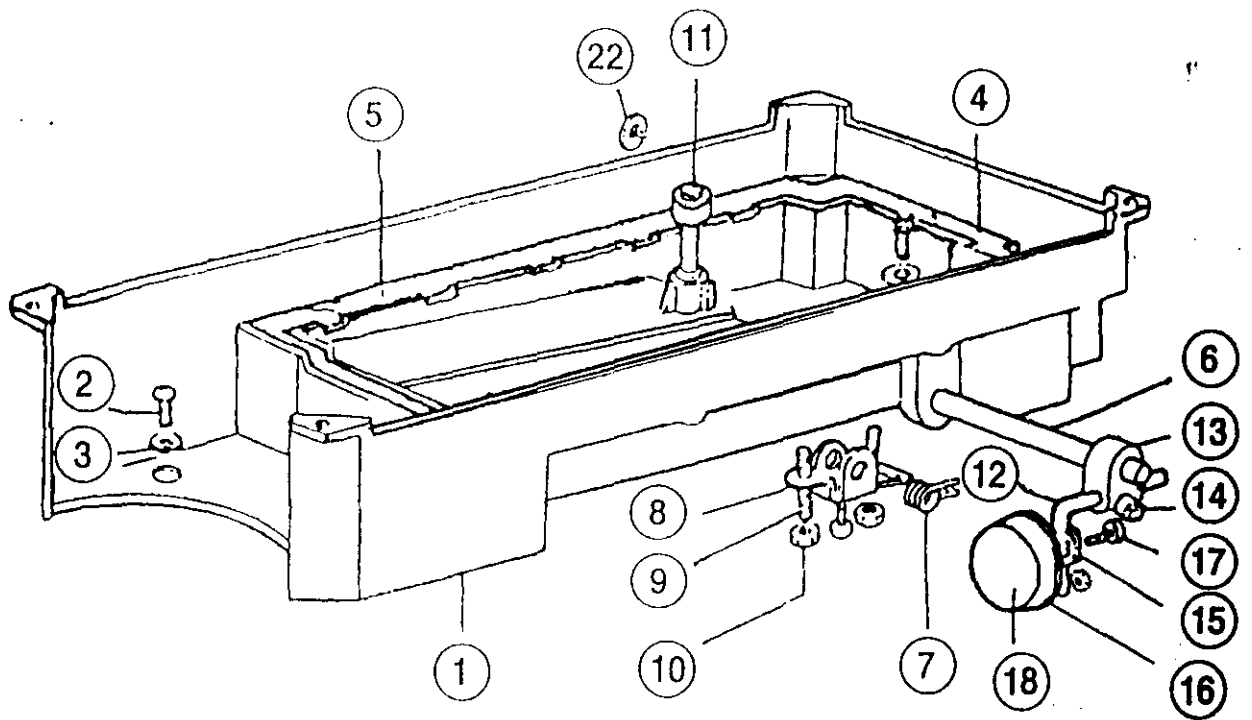
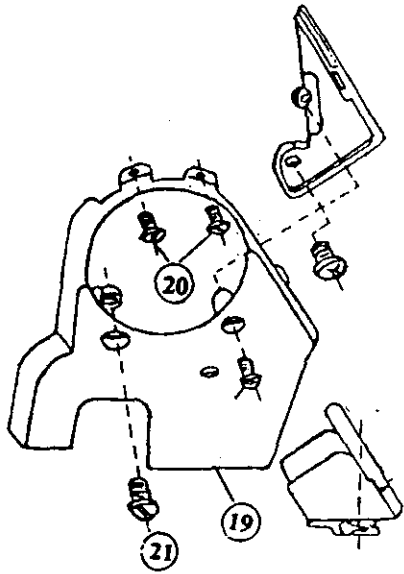
8. OIL LUBRICATION MECHANISM



8. OIL LUBRICATION MECHANISM

1	22T8-001	Oil pump body	1
2	22T8-002	Oil pump impeller	1
3	22T8-003	Screw	1
4	72T8-005	Screw	3
5	22T8-005	Spring washer	1
6	22T8-006	Oil pump fitting plate	1
7	22T8-007	Oil adjusting plate	1
8	22T8-008A	Oil pump screen complete	1
9	22T8-009	Screw	3
10	22T8-010B	Oil pipe for hook shaft	1
11	72T8-001A	Oil braid fitting plate	1
12	22T7-015	Screw	2
13	22T8-13D	Oil pipe for arm shaft	1
14	22T8-014	Oil return pipe	1
15	22T8-015	Felt pouch	1
16	72T8-006	Pipe holder	1
17	22T2-004	Screw	1

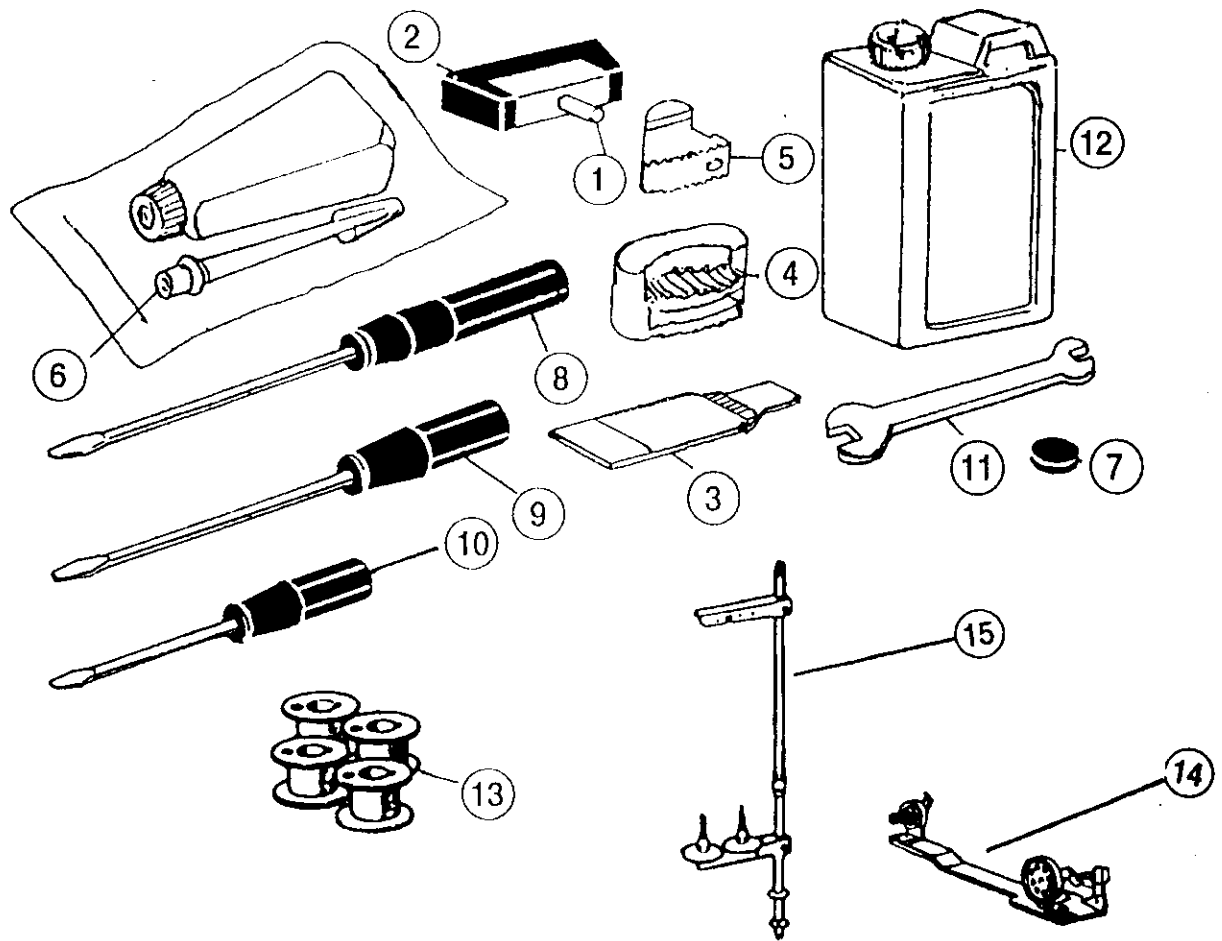
9. OIL RESERVOIR AND BELTGUARD



9. OIL RESERVOIR AND BELTGUARD

1	74T9-001A1	Oil reservoir	1
2	22T9-001A2	Oil drain screw	1
3	22T9-001A3	Washer	1
4	22T9-001A4	Gasket (big)	1
5	22T9-001A5	Gasket (small)	1
6	72T9-016	Hinge pin for kneelifter	1
7	22T9-001A7	Spring	1
8	22T9-001A8	Kneelifter stop bracket	1
9	22T9-001A9	Adjusting screw	2
10	22T9-001A10	Lock nut	2
11	22T9-003B1	Knee lifter lifting rod	1
12	22T9-003B2	Knee lifter bell crank	1
13	22T9-003B3	Joint	1
14	72T9-014	Set screw	2
15	22T9-003B6	Bracket for knee lifter plate	1
16	22T9-003B5	Knee lifter plate	1
17	22T9-003B7	Set screw	1
18	22T9-003B8	Knee lifter pad	1
19	22T9-004C1	Belt cover	1
20	72T-017	Screw	2
21	72T9-028	Screw	2
22	GB896-76	Washer	1

10. ACCESSORIES



10. ACCESSORIES

1	22T9-007F1	Hinge of machine head	2
2	72T9-004C1	Machine rubber	2
3	73T2-004	Needle (DJx1)	1
4	72T9-005	Rubber cushion (big)	2
5	72T9-006	Rubber cushion (small)	2
6	22T9-011	Oiler	1
7	22T9-012	Magnet	1
8	72T9-007	Screw driver (long)	1
9	72T9-020	Screw driver (medium)	1
10	72T9-021	Screw driver (short)	1
11	72T9-022	Wrench	1
12	22T9-017	Oil container	1
13	11H4-001	Bobbin	4
14	22T9-006	Bobbin winder assy.	1
15	FPL-2	Thread stand assy.	1

