

INSTRUCTION MANUAL  
ILLUSTRATED PARTS LIST

FOR

**SINGER**

MACHINES

2188D -33

THE SINGER COMPANY



# CONTENTS

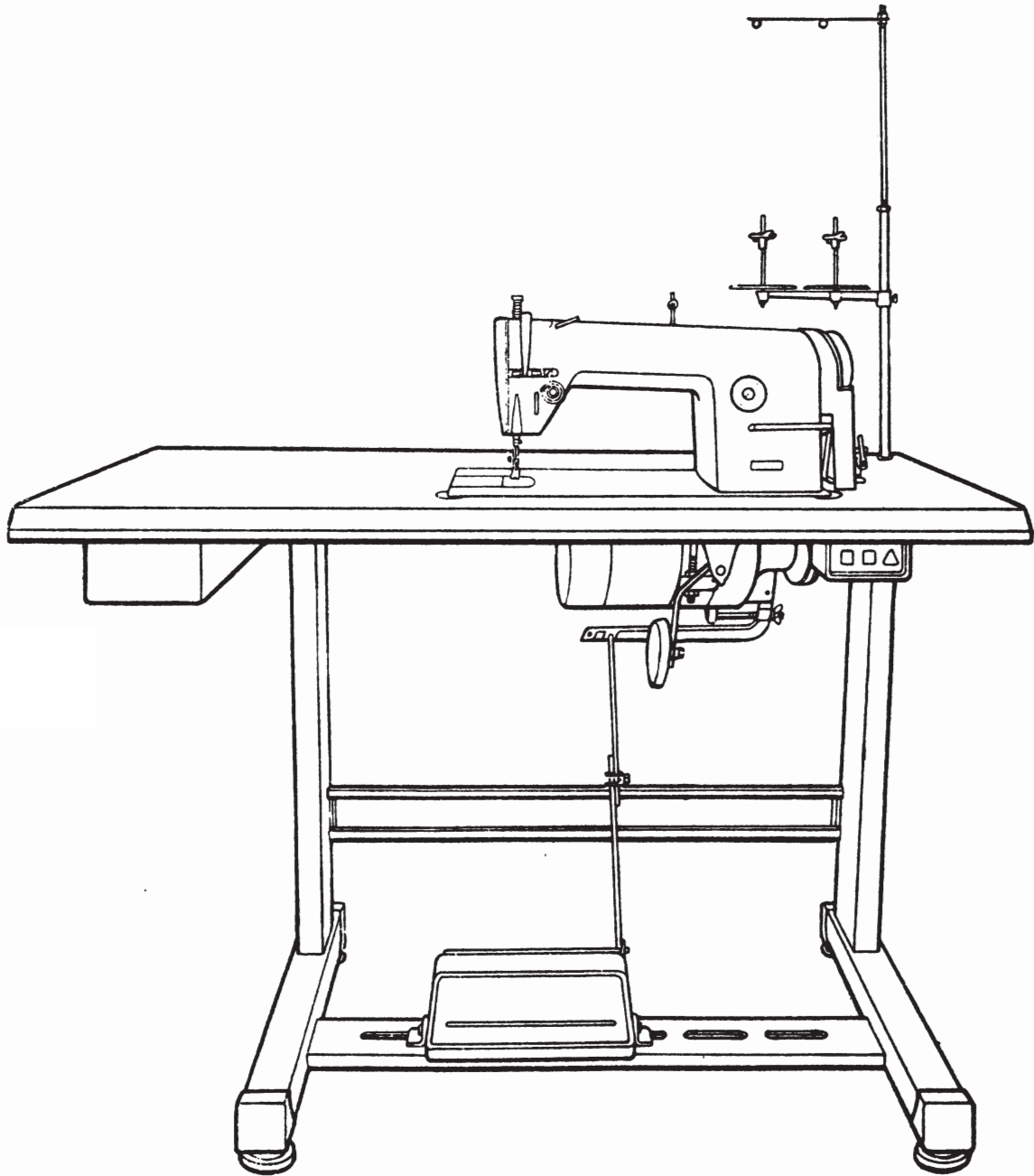
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# Instruction Manual



## A. INTRODUCTION

The medium speed flat bed industrial sewing machine is single straight needle, double thread lockstitcher, which is suitable for sewing medium weight knitting, cotton, wool and artificial fibre or light leather etc. in knitting, shirt, underwear and garment factories.

The machine adopts link take up lever and forward & backward feed system with built-in presser lift, wipe equipment, trimmer and tape wheel cover; helical taper gear driven in upper and lower shaft system. The gear is sealed by aluminium die-casting cover, The main parts of the machine are made of high quality alloy steel. This results in its steady running, lower noise, easy operation, safety and durability.

## B. MAIN TECHNOLOGICAL SPECIFICATIONS

1. Maximum sewing speed: 3000 s.p.m.
2. Maximum needle gauge: 4mm
3. Presser lifting amount: 6mm (10mm by knee lifting)
4. Sewing ability of maximum thickness: 5mm (wool fabric)
5. Sewing thread: Left twist 42-100 cotton thread of silk, linen and nylon thread
6. Needles: N1515-01-#16
7. Working space from the right side of the needle bar: (L)260 × (H)130(mm)
8. Electrical motor power: 380V/370W
9. Oil: Singer oil type B.

## C. MACHINE INSTALLATION AND OPERATION PREPARATION

### 1. Machine installation:

#### (1) Proper Fitting:

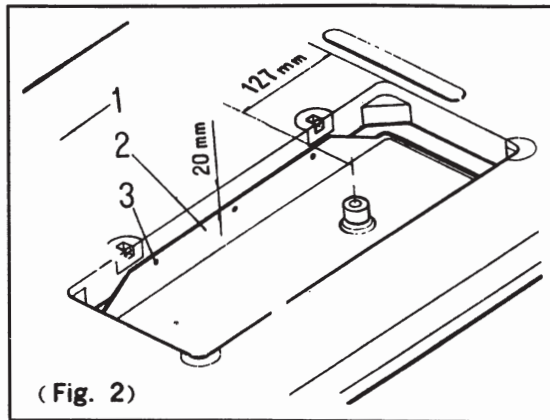
The machine should be installed on a strong base to ensure the machine to have a steady running and minimum vibration at high speed. If the four rubber mats on the feet of the sewing machine stand have a good connection with ground, it results in lower noise in operation.

#### (2) Fitting oil pan:

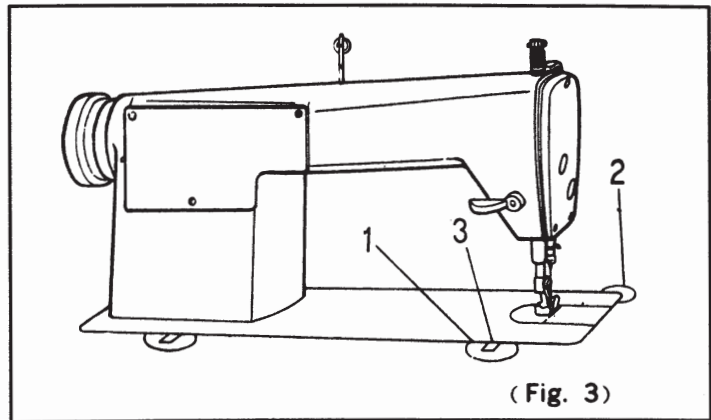
In Fig. 2 put oil pan 2 into the frame of table, then set it with screw 3.

#### (3) Fitting machine head:

In Fig. 3, first put machine head link hook base 1 and machine head base mat 2 into the semi-hole of table, then hang the connecting hook 3 on hook base 1. Turn the machine head to make it sit in the middle of the frame of the table. It must be noticed that machine head should run actively.



( Fig. 2 )



( Fig. 3 )

#### (4) Fitting thread winder

After fitting machine head and belt, the thread winder can be fitted. In fig. 4 when fitting winder, the winder wheel 1 should face the outside of belt 2. Between winder wheel and belt should have a certain clearance. If push down winder wheel stand 3, the winder wheel should touch the belt, And when balance wheel running, the belt can make the winder wheel run together, Then tighten screw 4 to set the thread winder on the table.

#### (5) Fitting knee lifter

1) Shown in Fig. 5, first set the base 1 on the bottom of the table with screw 2, put the node of presser lift 3 and presser lift 8, crank 10, and spring 6 on the parts of knee lifter shaft 7, then put 7 into the hole of base 1, and put the another base 12 on the another end of the shaft, it must be noticed that the centre of two shaft holes of the two bases should be in perfect alignment so that the shaft can run actively. Then set the base 12 on the bottom of table with screw 13

2) Insert short end of presser operating lever 14 into another hole of presser lift node 3 and temporarily set it with screw 5, put screw 16 and nut 17 on the operating plate position stand, then together with operating plate 18 cover into long end of presser lift operating lever 14 and temporarily set it with screw 16. Finally fitting soft mat of operating plate 19 on the operating plate 18

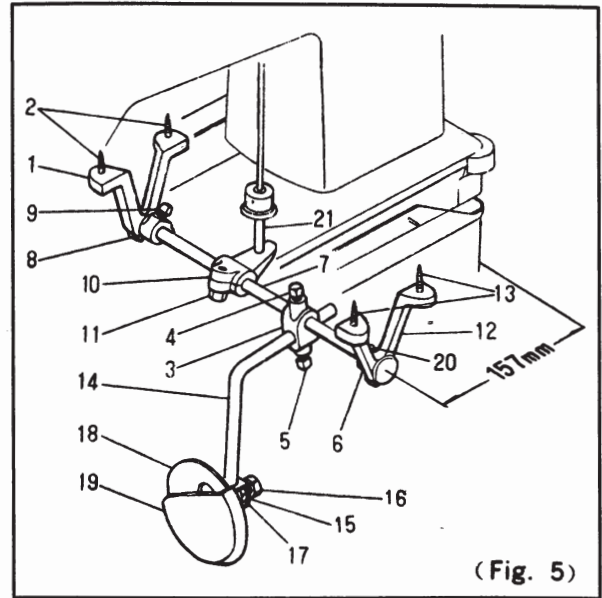
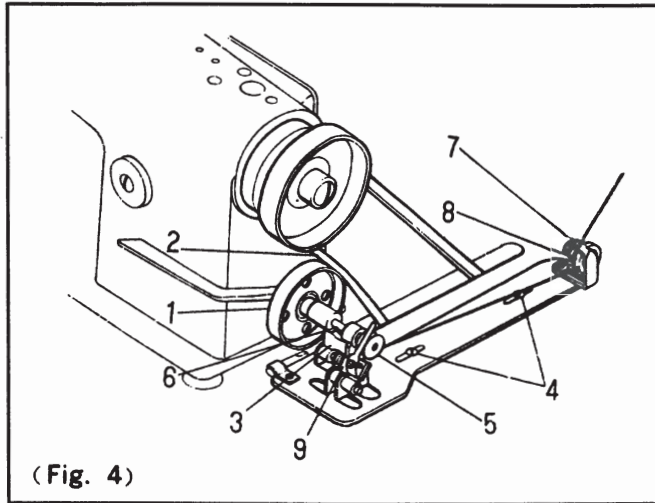
3) Fit operating plate in proper position and tighten screw 11, at this time presser lift crank 10 should meet with oil pan top lever pin 21

4) Short end of spring 6 should be hooked on to shaft pin 20, and the long end on to base 12 so that the presser lift crank 10 separates from the oil pan top lever pin 21.

5) Push operating plate 18 to make the presser lift up to the highest position of 10 mm from needle plate, turn the node 8 to makes it meet the node of base, then tighten screw 9. Thus the size of Swinging angle of operating plate can be controlled, And when lifting the presser, it will not make noise

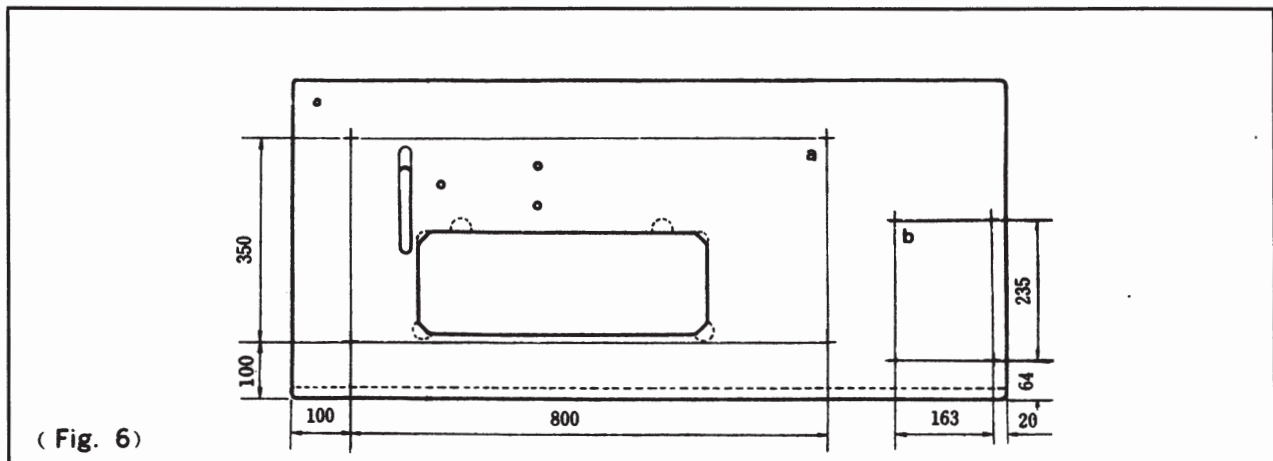
6) As per operator's height, regulate the position of operating plate 18, then set it with screw 4, 5 and 16..





(6) Sketch map of machine stand installation: (Fig. 6)

- a. Position of machine stand.
- b. Position of drawer.



2. Operation preparation:

(1) Cleaning:

Before packing each part of the machine, should be covered with anti-rust grease. And before operating new machine, anti-rust grease on each part of machine should be cleaned out with gasoline and clean soft cloth.

(2) Inspection:

Some parts of machine head may get loose due to vibration incurred in transit or rough handling, so after cleaning, the machine should be thoroughly inspected. To check the machine head by means of turning balance wheel. The machine head must be regulated in the case of condition such as abnormal noise from the compact of moving parts, the difficulty of the machine head to run, running into each other of moving parts.



(3) Lubrication:

Before operating, every running part of the machine and oil tank should be filled with machine oil. Then operate it at lower speed for several minutes. It is necessary to fill oil at least twice a day. When to fill oil, make sure the oil is Singer oil type B.

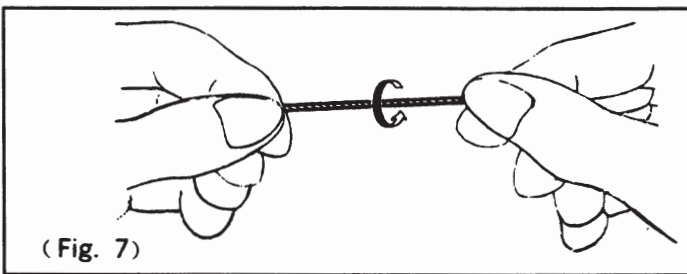
(4) Testing:

- 1) When machine running, the balance wheel should be counterclock wise. (see right side)
- 2) The machine can not run without materials after threading.
- 3) At the beginning of operating, the speed of machine can over 2500 spm. Only after one or two months of running can the speed of the machine be increased as per nature of fabrics.

## D. OPERATION

1. Selecting sewing thread:

Needle thread should be left twisting (Fig.7)



2. Needle and thread:

The original needle on this machine is model Cat. 1515-01. If the needle is changed into model Cat. 1315-01 , the needle bar should be regulated lower. The size of the needle is #9-#18.

Needle size	Thread size			Materials to be sewn
	Cotton	Silk	Nylon	
# 9	100-120	30	3-56	Light materials
#11	80-100	24-30		Light materials
#14	60-80	20		Medium materials
#16	40-60	16-18		Medium materials
#18	30-40	10-12		Heavy materials

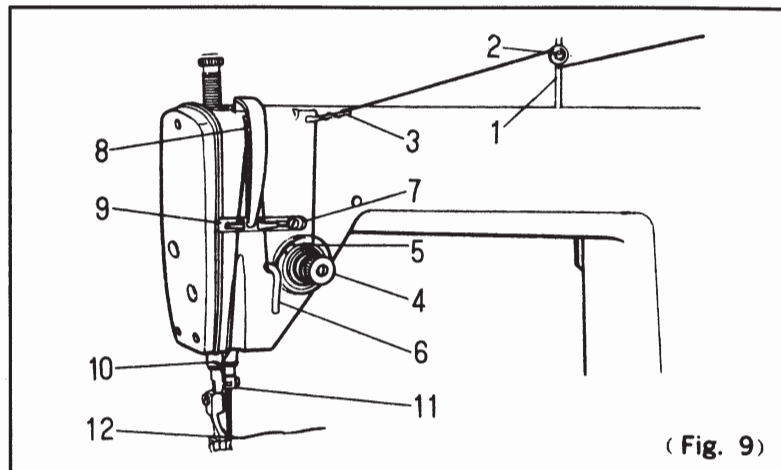
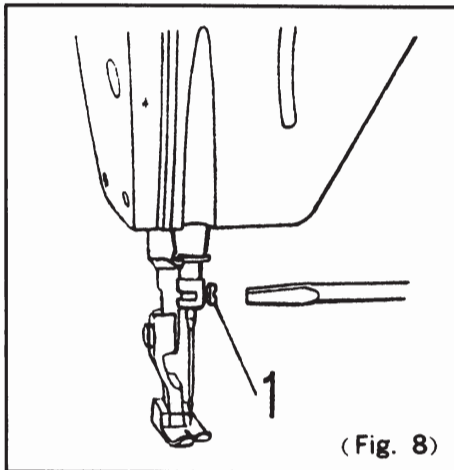
3. Fitting needle:

Turning balance wheel to make the needle bar in the highest position and loosen the screw 1 (Fig.8). Long groove of needle should face left of the operator. Insert the needle into the hole of the needle bar. Tighten the screw 1.

#### 4. Threading:

As per Fig. 9, when threading needle thread, first, put the thread through thread guide 1 and tension plate 2 and thread retainer 3, down through tensioner 4 and thread take up spring 5 and thread releasing hook 6. Then up through right thread hook 7 and thread take up lever 8. Again down through left thread hook 9 and needle bar sleeve thread hook 10 and needle bar thread hook 11, Finally pull the thread through needle hole 12 from left to right with thread tail 100 mm .

When threading bobbin thread, hold the needle thread while turning balance wheel to make the needle bar move down and then to make it rise in the highest position. Then the bobbin thread is pulled out with the needle thread. Finally put the two threads under the presser foot.



#### 5. Winding bobbin:

Insert bobbin 5 (Fig. 4) into the top of the winder shaft 6. Put the needle thread through hole of thread guide bracket 7 and insert it between two plates 8. Then the needle thread is wined several times on the bobbin. Pull down the full-thread plate 9, thus the winding wheel can press the tape. Then operate the machine, And the winder can work automatically. When the bobbin is full, the winder will stop automatically.

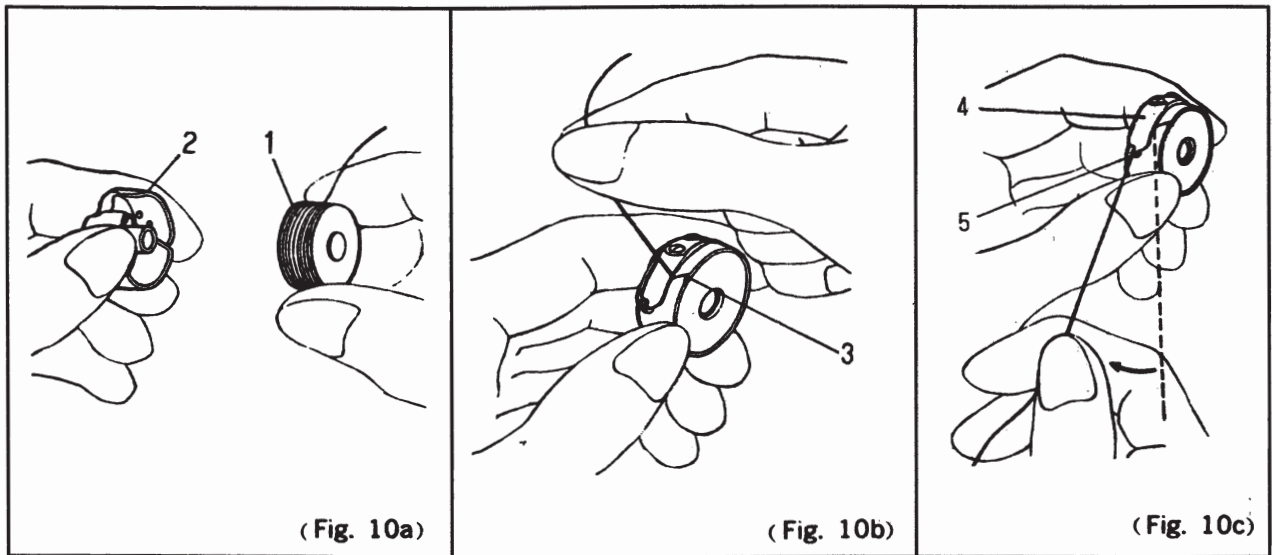
Increasing pressure on the tension plate 8 can regulate thread tension. Moving thread guide bracket 7 can regulate thread arrangement. In general, bobbin can not be wined overfull. Winding amount can be controlled by full-thread plate 9.

#### 6. Threading bobbin case:

Put the full bobbin 1 (Fig. 10a) into the case 2;

Insert thread into slot 3 (Fig. 10b);

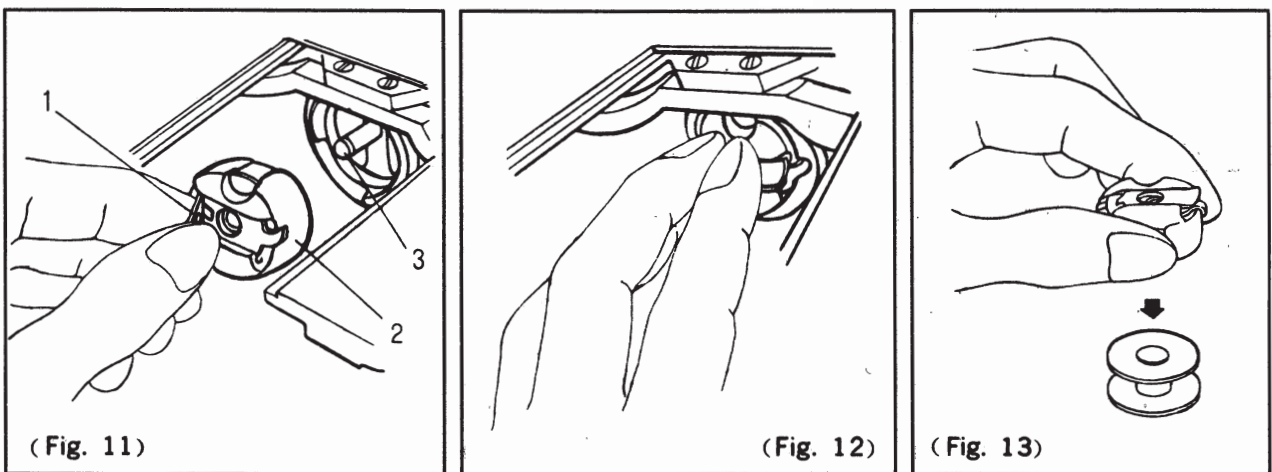
Through the spring 4, the thread is pulled out of the hole 5 about 100 mm.



### 7. Loading and unloading bobbin:

Hold bobbin case lid 1 and insert bobbin case 2 into the shaft 3 of rotary hook (Fig. 1 1), Turn the balance wheel and watch if the bobbin case is set.

When unloading bobbin case, turn balance wheel to raise the needle bar in the highest position. Then open the bobbin case lid and take out the bobbin case.



### 8. Regulate needle gauge and feeding:

Turning the rotary button can regulate the width of needle gauge (Fig. 14). If turning counter clockwise, the needle gauge is wide. If turning clockwise, the needle gauge is narrow, If it is necessary to back tack, just put down the lever under the rotary button.

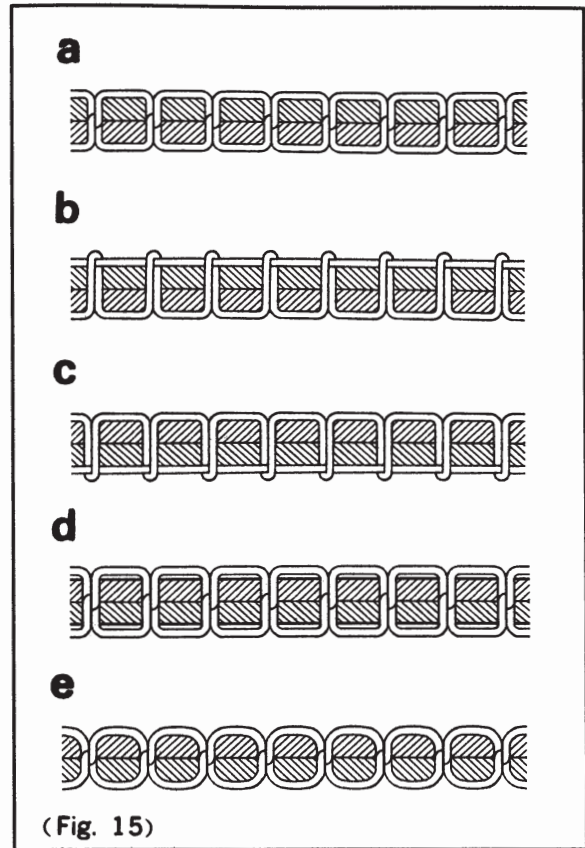
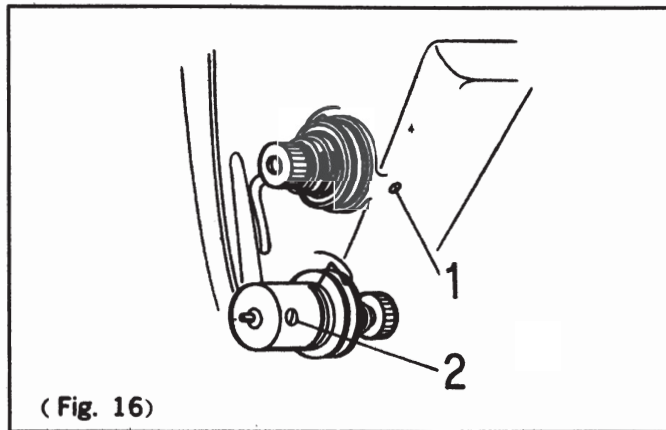
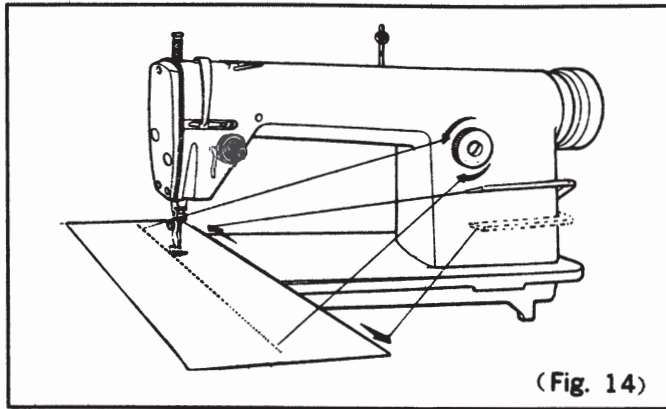
### 9. Thread tension:

Thread tension is changed as per sewing material and thread size. In Fig. 15. There are five stitches which often appear.

(a) Normal. Two threads lock in the middle of the material.

(b) Needle thread tension is too high. Two threads lock on the surface of the material.

- (c) Needle thread tension is too low. Two threads lock under the material.
- (d) The two threads tension are both low. They are floating on the surface of the material.
- (e) The two threads tension are both high. They are locking tightly in the material.



**(1) Regulating take up spring:**

In general, the tension of take-up spring is 20g and the range of swinging is 7-10mm. When sewing special light material (narrow needle gauge), the tension should be reduced and the range should be broadened. Vice-versa for special heavy material.

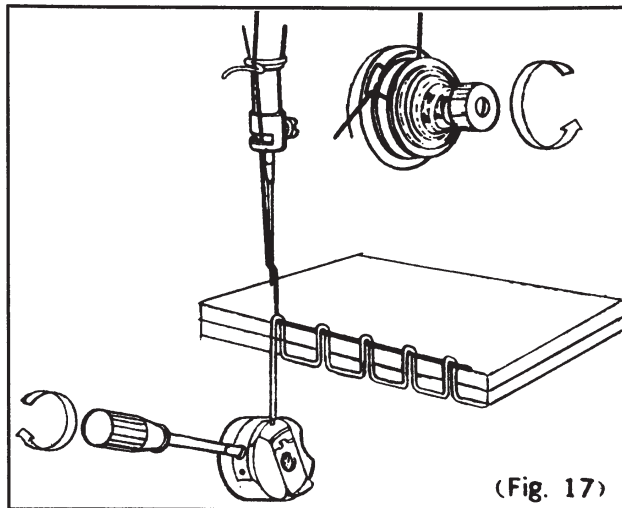
When regulating the range of swinging, first loosen the set screw 1 (Fig. 16.) Then turn the tensioner to regulate the range of swinging. If turn the tensioner clockwise, the range is broadened. If turning counter clockwise, the range is narrowed, Then tighten the screw.

When regulating the tension of take up spring, first loosen set screw 1, and take out the tension. Then loosen set screw 2, so the tension screw can be turned. Turning clockwise can increase tension. Turning counter clockwise can reduce tension.

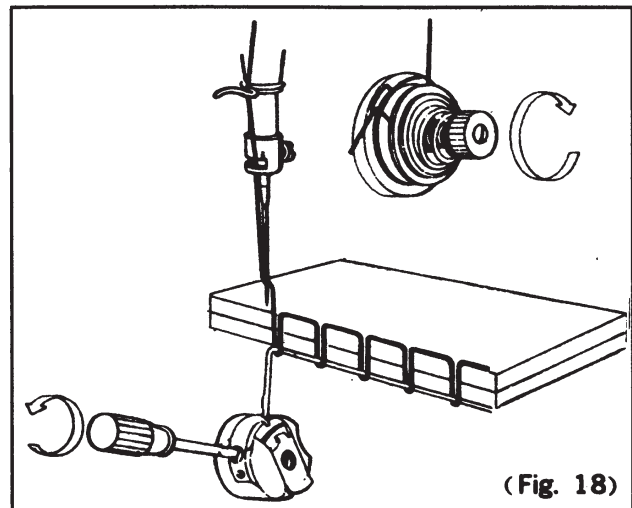
**(2) Regulating thread tension:**

The stitch on sewing material should in Fig 15 (a). If needle thread is too tight while bobbin thread is loose, the tension nut should turn counter clockwise to loosen the needle thread pressure and tighten the screw of bobbin spring to increase the bobbin thread pressure (Fig. 17). Vice versa in previous case (Fig. 18).





(Fig. 17)



(Fig. 18)

#### 10. Regulating Presser Pressure:

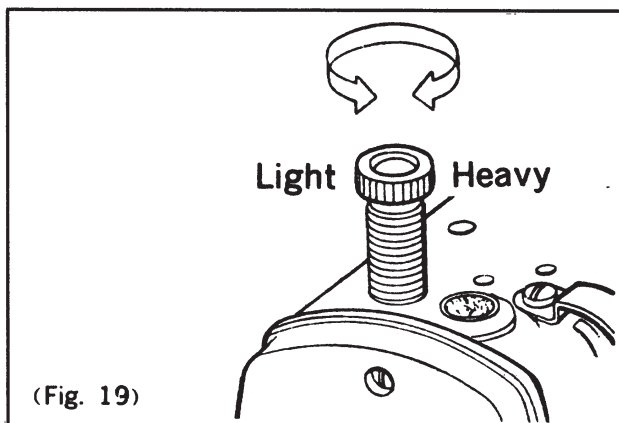
Presser pressure should be regulated as per sewing materials. When sewing heavy materials, the pressure should be increased. Just turn the screw on top of the machine head (Fig. 19) (heavy). Vice-versa when sewing light material (Fig. 19) (light).

Presser pressure should be properly regulated so that it can feed material without a hitch.

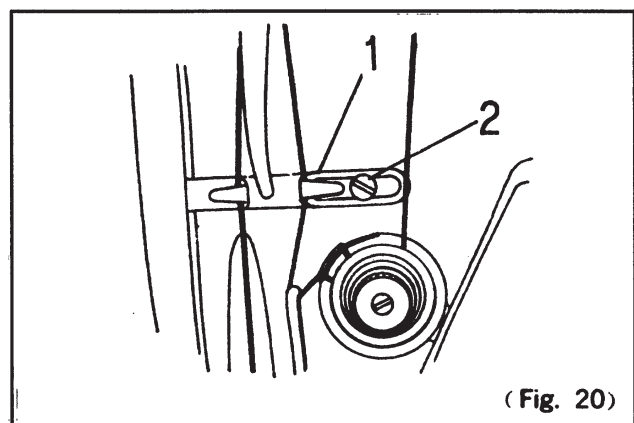
#### 11. Regulating thread hook:

In order to make the stitches move beautifully, the position of thread hook should be regulated as per materials and the gauge of the needles.

When sewing heavy materials, first loosen the screw 2 (Fig. 20) and move the thread hook 1 to left to increase the thread amount. Vice-versa when sewing light materials.



(Fig. 19)



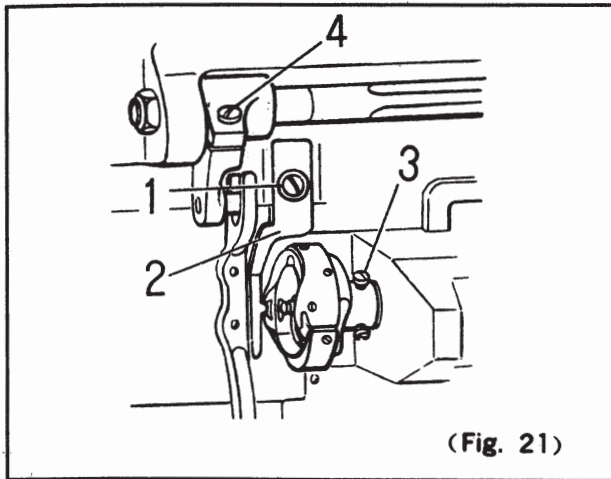
(Fig. 20)

## E. REGULATING MACHINE

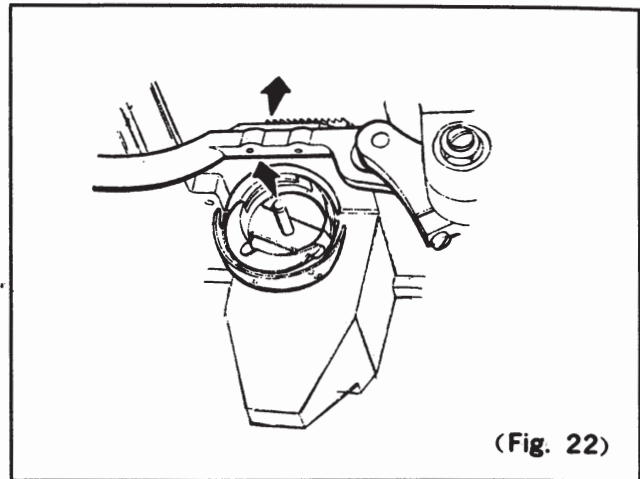
### 1. Loading and unloading rotary hook:

First raise the needle bar in the highest position. Take off the needle plate needle and bobbin. Then loosen the positioning hook screw 1 of rotary hook (Fig. 21) and take off the Positioning hook 2. Then loosen the three set screw 3.

Turn the balance wheel to raise the feed bar in the highest position (Fig. 22). Then turn the rotary hook in the position of Fig. 22, thus the rotary hook can be easily taken off.



(Fig. 21)



(Fig. 22)

## 2. Adjustment of rotary hook looping timing:

The moving relationship between rotary hook and needle affects sewing features greatly. The

standard rotary hook looping timing is:

After the needle moves down in the lowest position, it then rises to 2.2 mm, at this time:

- (1) Looping point of rotary hook should be in line with the mid-line of needle;
- (2) Looping point should be 2 mm higher than the hole of needle (Fig.23).

Regulating method:

- (1) Loosen the three set screws of rotary hook.
- (2) Turn balance wheel to lower the needle in the lowest position and then raise it 2.2 mm
- (3) Turn the rotary hook to make the looping point on the position of the mid-line of needle.
- (4) Loosen the set screw 1 of needle bar link shaft (Fig. 24).
- (5) Regulate the height of needle bar to make the looping point 2 mm higher than the hole of

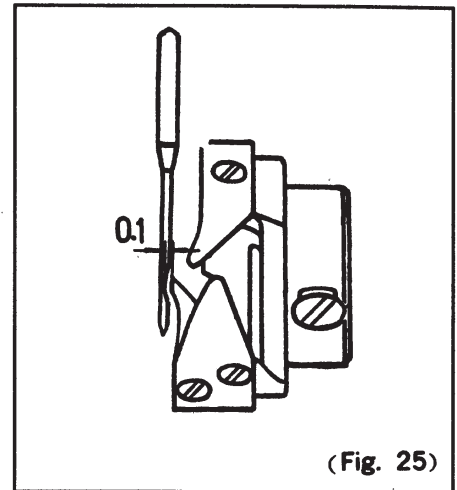
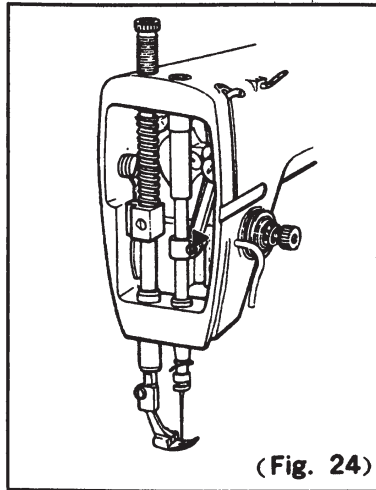
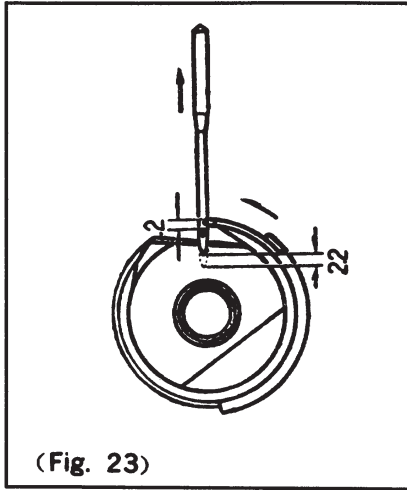
needle.

When regulating rotary hook looping timing, be careful of the side clearance between looping point and needle.

The gap between the level of looping point and the bottom of needle should be regulated in 0.1 mm (Fig. 25).

## 3. Regulating feed dogs length:

The top of feed dogs should be 0.6-1 mm higher than the level of needle plate when the feed dogs rise in the highest position. If sewing special heavy or light materials, the gauge of feed dogs should be regulated. When regulating, first loosen the set screw 4 (Fig. 21) of lifting bell crank.





## F. TROUBLES DUE TO INCORRECT USE OR ADJUSTMENT OF THE MACHINE

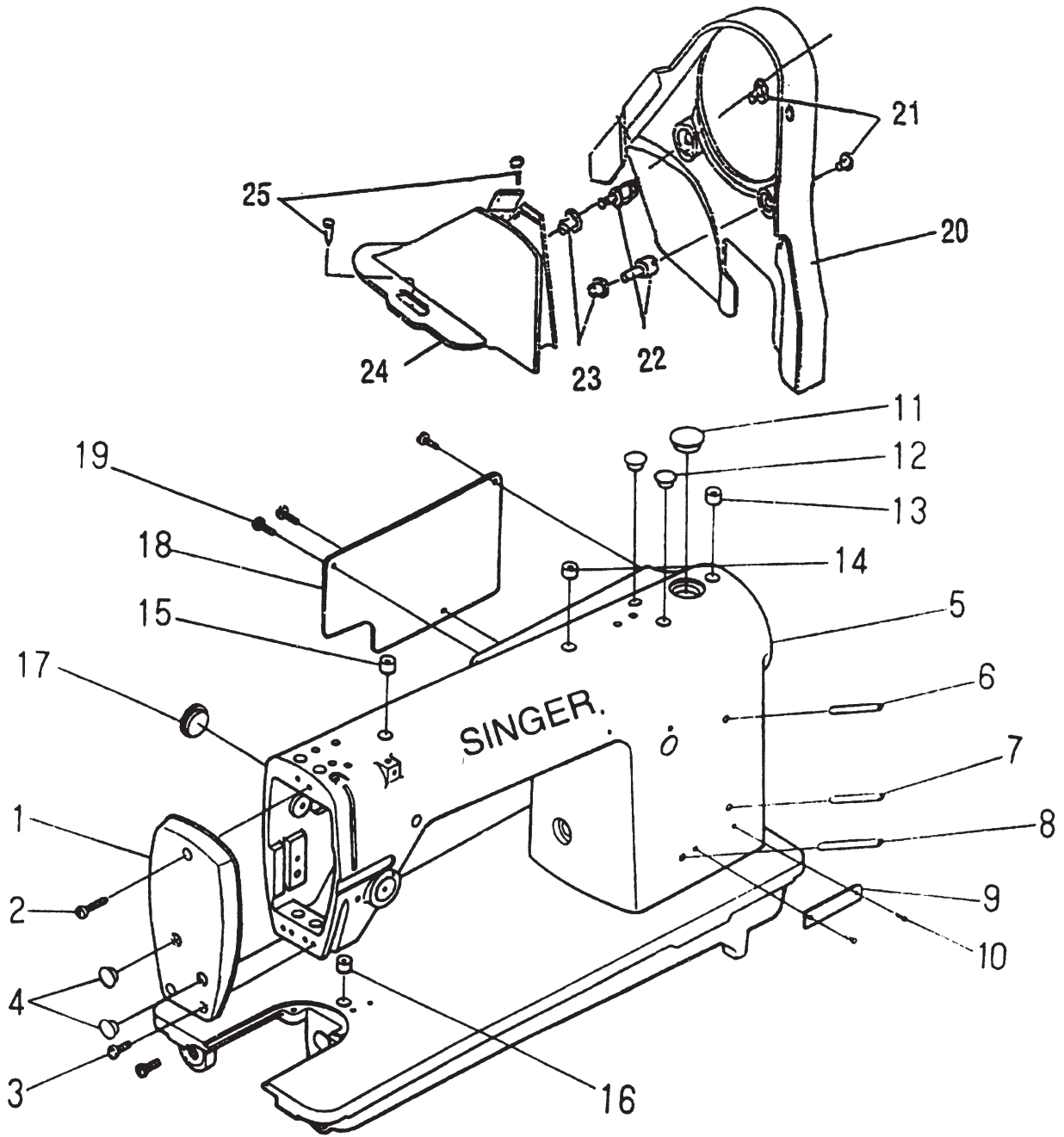
Fault	Probable cause	Solving method
Needle breaking	<ol style="list-style-type: none"> <li>1. Needle too thin or sewing materials too heavy.</li> <li>2. Needle bent.</li> <li>3. Needle badly fitted.</li> <li>4. Strongly pull the sewing materials when sewing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to the part of needle, thread, and sewing materials.</li> <li>2. Change the bent needle.</li> <li>3. Correct needle position.</li> <li>4. Properly sewing.</li> </ol>
Skipped stitches	<ol style="list-style-type: none"> <li>1. The side clearance and position between needle and rotary hook badly adjusted.</li> <li>2. Needle bent</li> <li>3. Needles and materials unfit. Hole on the needle plate too Large.</li> <li>4. Weak bobbin thread tension and Presser pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Regulating as per instruction book.</li> <li>2. Change the bent needle.</li> <li>3. Refer to the part of needle and to increase return amount of rotary sewing material. Lower the needle a little hook (for light materials).</li> <li>4. Increase them.</li> </ol>
Thread breaking	<ol style="list-style-type: none"> <li>1. Thread quality.</li> <li>2. Needle and thread unfit.</li> <li>3. Rough surface of thread guide.</li> <li>4. Tension too tight.</li> <li>5. Needle position badly fitted</li> <li>6. High temperature of needle fuses artificial fibre thread.</li> <li>7. Weak bobbin thread tension.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use high quality thread.</li> <li>2. Refer to the part of needle and thread.</li> <li>3. Polishing.</li> <li>4. Loosen the tension nut.</li> <li>5. Regulating it.</li> <li>6. Cooling needle.</li> <li>7. Regulating it.</li> </ol>
Thread floating	<ol style="list-style-type: none"> <li>1. Rotary hook is bad quality and badly fitted.</li> <li>2. Needle too thin.</li> <li>3. Feed dogs too low.</li> <li>4. Weak needle thread tension.</li> </ol>	<ol style="list-style-type: none"> <li>1. Change a new one and increase return amount of rotary hook.</li> <li>2. Change a thick one</li> <li>3. Raise them.</li> <li>4. Increase it.</li> </ol>

	5. Problem of presser foot.	5. Narrow the distance between bottom of the presser slot and needle. Change a new presser foot.
	6. Weak take-up spring	6. Increase it.
Twisted stitches	<ol style="list-style-type: none"> <li>1. Strong needle thread tension.</li> <li>2. Needle too thin or thick</li> <li>3. Needle badly fitted.</li> <li>4. The hole of needle bar thread guide too big.</li> </ol>	<ol style="list-style-type: none"> <li>1. Decrease it.</li> <li>2. Properly select.</li> <li>3. Regulating it.</li> <li>4. Use small one.</li> </ol>
Puckering	<ol style="list-style-type: none"> <li>1. Strong needle thread tension and take-up spring.</li> <li>2. Rough needle plate and presser foot. Unproper pressure.</li> <li>3. Movement of feed dogs quicker than needle bar.</li> <li>4. Needle too thick.</li> <li>5. Bobbin too heavy.</li> <li>6. Feed dogs too slant or 0.8 mm higher.</li> <li>7. The hole on needle plate too large.</li> </ol>	<ol style="list-style-type: none"> <li>1. Decrease them.</li> <li>2. Polishing them and regulating the pressure.</li> <li>3. Regulating it to the standard or slower than needle bar.</li> <li>4. Use slim one.</li> <li>5. Decrease its weight or use aluminium bobbin.</li> <li>6. The front of feed dogs should be higher, lower the height of feed dogs.</li> <li>7. Use small one.</li> </ol>

# Illustrated Parts List

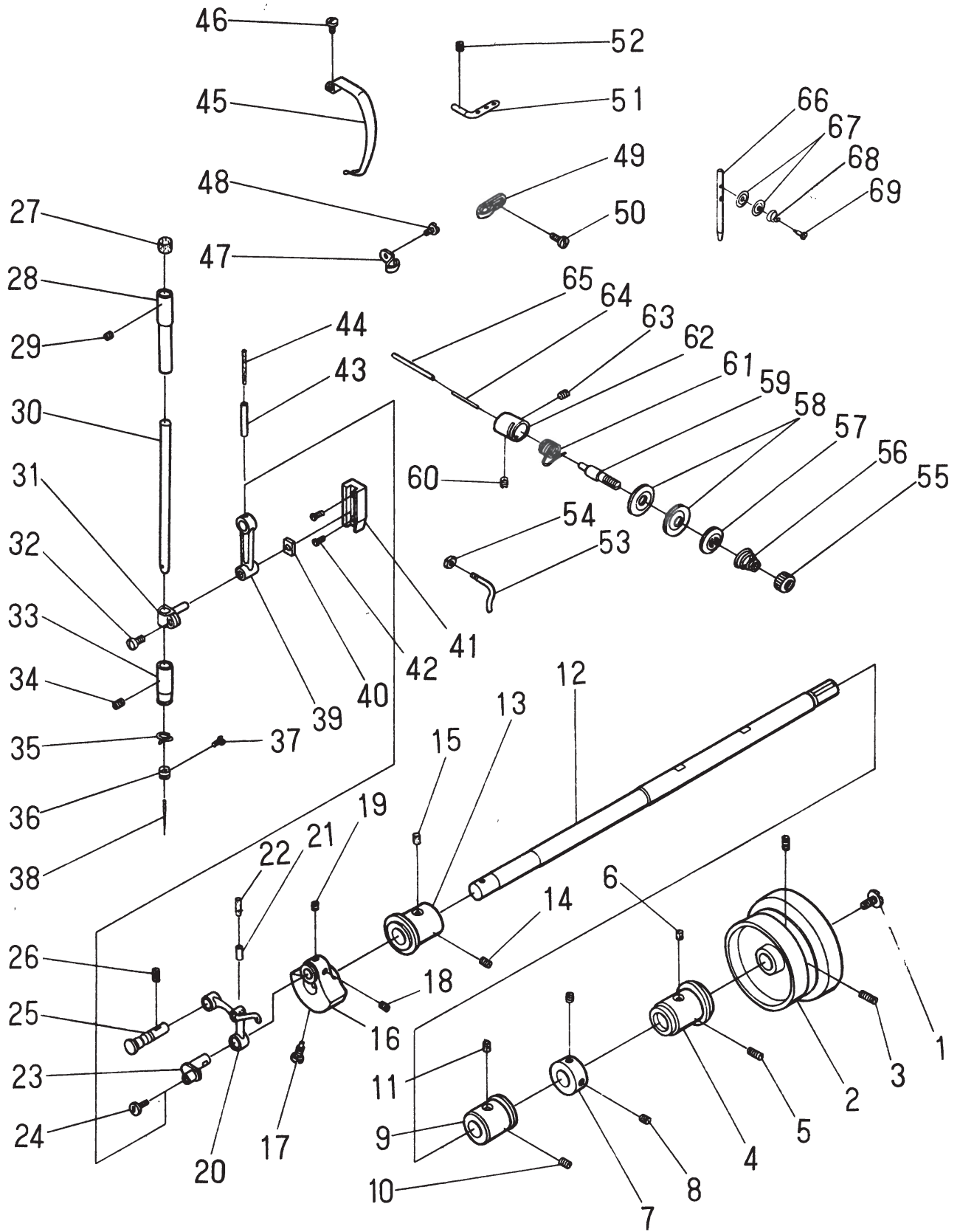
## A. Arm components

Ref.No.	Part.No.	Description	Amt. Req.
1	GR044	Face Plate .....	1
2	GS35	Upper screw for face plate .....	1
3	GS42	Lower screw for face place .....	2
4	GR537	Oil pad for face plate .....	2
5	GQ12/9	Arm .....	1
6	GR165	Upper oil tube for upright arm shaft .....	1
7	GR043	Lower oil tube for upright arm shaft .....	1
8	GR166	Lower shaft back bushing oil tube .....	1
9	GQ15	Model brand .....	1
10	GX1	Rivet .....	2
11	GR539	Upright shaft oil pad .....	1
12	GR537	Oil pad screw-hole .....	2
13	GR164	Oil cup for upper shaft back bushing .....	1
14	GR164	Oil cup for upper shaft middle bushing .....	1
15	GR164	Oil cup for upper shaft front bushing .....	1
16	GR164	Oil cup for lower shaft front bushing .....	1
17	GR539	Oil pad for needle bar crank screw hole .....	1
18	GR015	Back cover plate .....	1
19	GS42	Back cover plate screw .....	3
20	GR016	Balance wheel front cover .....	1
21	GR017	Balance wheel front cover screw .....	2
22	GS81	Cover column .....	2
23	GS54	Cover column screw .....	2
24	GR018	Balance wheel back cover .....	1
25	GBS104	Balance wheel back cover screw .....	2



## B.Upper shaft, needle bar components

Ref.No.	Part.No.	Description	Amt. Req.
1	GS24	Set screw for balance wheel	1
2	GP5	Balance wheel	1
3	GS37	Balance wheel screw	2
4	GO4	Upper shaft back bushing	1
5	GS37	Screw for upper shaft back bushing	1
6	GR124	Oil felt for upper shaft back bushing	1
7	GR019	Stop ring for upper shaft middle bushing	1
8	GS50	Set screw for upper shaft middle bushing stop ring	2
9	GO14	Upper shaft middle bushing	1
10	GS50	Set screw for upper shaft middle bushing	1
11	GR124	Oil felt for upper shaft middle bushing	1
12	GZ18	Upper shaft	1
13	GO5	Upper shaft front bushing	1
14	S2	Set screw for upper shaft front bushing	1
15	GR124	Oil felt for upper shaft front bushing	1
16	GR89	Needle bar crank	1
17	GS38	Set screw for needle bar crank	1
18	GS58	Set screw for take-up crank	1
19	GS39	Thumb screw for take-up crank	1
20	GR91/4	Take-up lever parts	1
21	GR024	Oil tube for take-up lever	1
22	GR621	Oil wick for take-up lever	1
23	GR90	Take-up crank	1
24	GR40	Set screw for take-up crank	1
25	GX13	Take-up link lever pin	1
26	GS37	Screw for take-up link pin	1
27	GR99	Needle bar oil seal	1
28	GO15	Needle bar upper sleeve pipe	1
29	GS43	Screw for needle bar upper sleeve pipe	1
30	GZ11	Needle bar	1
31	GR97	Needle bar link column	1
32	GR41	Screw for needle bar link column	1
33	GO7	Needle bar lower sleeve pipe	1
34	GS43	Screw for needle bar lower sleeve pipe	1
35	GR100	Needle bar upper thread hook	1
36	GR045	Needle bar lower thread hook	1
37	GS44	Screw for needle	1
38	N1515-01-#16	Needle	1
39	GR96	Needle bar link	1
40	GU1	Needle bar link column slide disc	1
41	GR020	Needle bar link column slide guide	1
42	GS42	Screw for needle bar link column slide guide	1
43	GR024	Needle bar link oil tube	1
44	GR621	Need bar link oil wick	1
45	GR021	Take up lever cover	1
46	GS81	Screw for take-up lever cover	1
47	GR472	Left thread hook	1
48	GS26	Left thread hook screw	1
49	GR471	Right thread hook	1
50	GS33	Right thread hook screw	1
51	GR101	Thread retainer	1
52	GS45	Thumb screw for thread retainer	1
53	GS104	Thread tension releasing regulating hook	1
54	GL1	Thread tension releasing regulating hook screw	1
55	GL10	Thread tension nut	1
56	GW19	Thread tension spring	1
57	G57	Thread tension releasing disc	1
58	GR013	Thread tension disc	2
59	GS85	Thread tension screw	1
60	GS83	Set screw for thread tension screw	1
61	GW18	Take-up spring	1
62	GR103	Take-up spring regulator	1
63	GS48	Take-up spring regulating screw	1
64	GX14	Thread tension releasing screw	1
65	GX25	Thread tensioner top lever	1
66	GR1492	Thread guide pin	1
67	GR1493	Thread guide tension disc	2
68	GW252	Thread guide tension spring	1
69	CS017	Thread guide tension screw	1

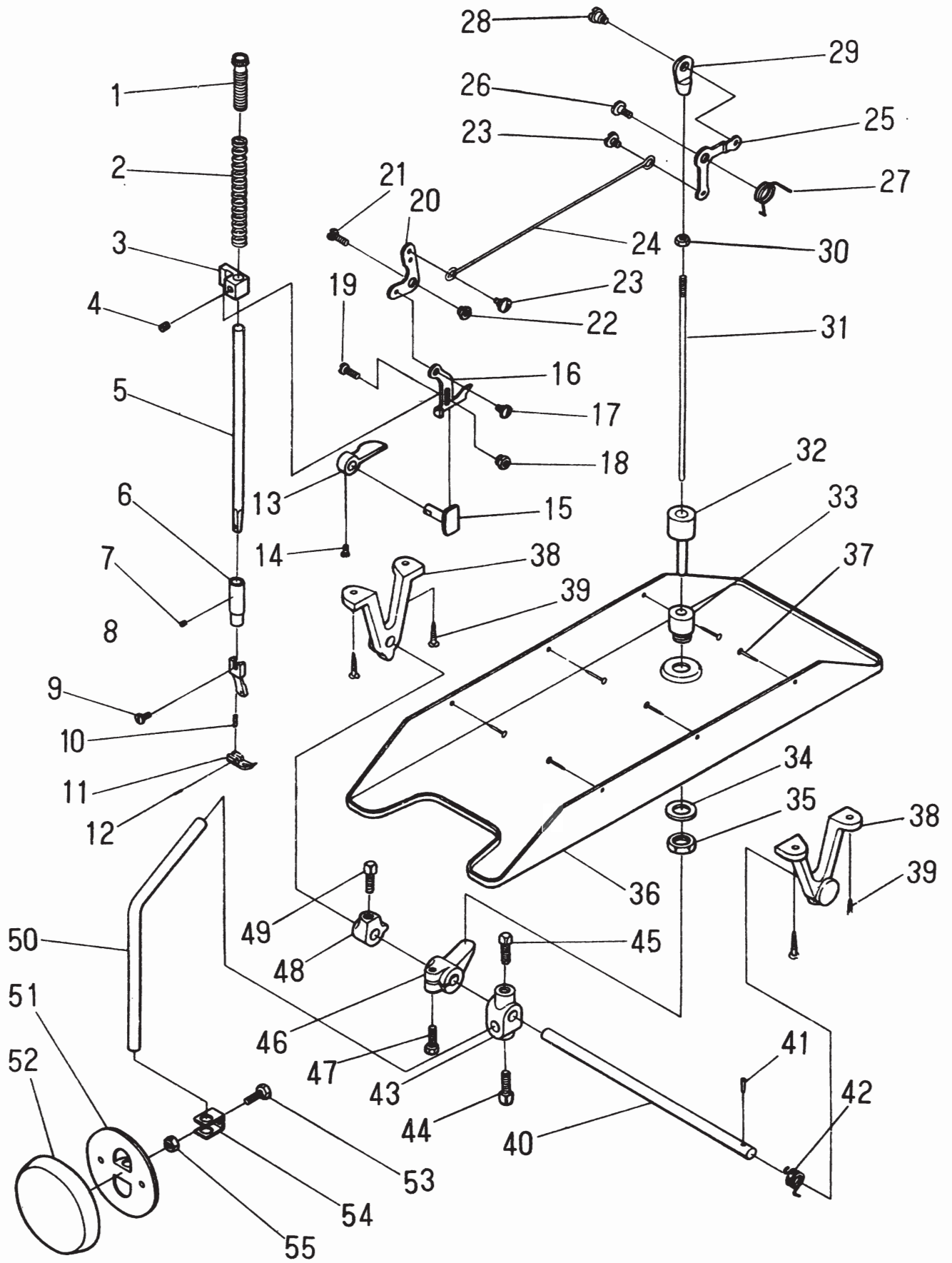




## C.Presser lift components

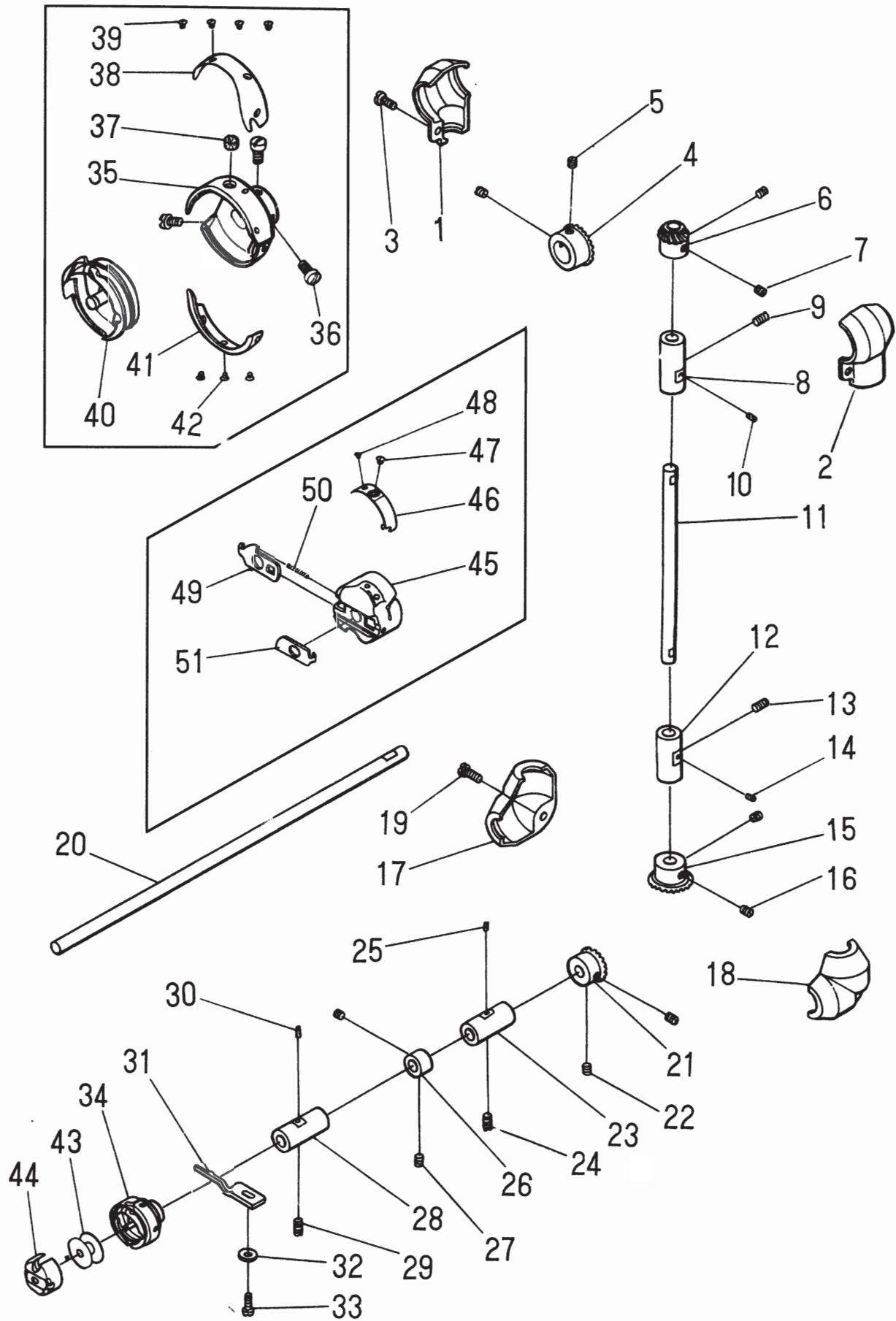
Ref.No.	Part. No.	Description	Amt. Req.
1	GS49	Pressure regulating screw	1
2	GW34	Pressure bar spring	1
3	GR031	Pressure bar guide bracket	1
4	GS50	Pressure bar guide bracket screw	1
5	GZ12	Pressure bar	1
6	G08	Sleeve for pressure bar	1
7	GS43	Screw for pressure bar sleeve	1
8	GR109	Movable presser foot crank	1
9	S40	Movable presser foot screw	1
10	GW30	Movable presser foot spring	1
11	GR110	Movable presser foot plate	1
12	GX15	Movable presser foot pin	1
13	GR030	Presser foot lever	1
14	GS81	Presser foot lever screw	1
15	GR029	Presser lift lever projecting frame	1
16	GR028	Presser lift lifter	1
17	GS88	Screw on the lifter	1
18	GL11	Screw stud for the lifter	1
19	GS69	Set screw for lifter	1
20	GS027	Presser lift front lever	1
21	GS69	Set screw for front lever	1
22	GL11	Screw stud for front lever	1
23	GS87	Presser lift pull lever screw	2
24	GR026	Presser lift pull lever	1
25	GR025	Presser lift back lever	1
26	GS86	Back lever screw	1
27	GW33	Back lever spring	1
28	GS53	Presser for top lever joining screw	1
29	GR113	Presser for top lever joint	1
30	GL6	Presser for top lever nut	1
31	GX26	Presser for top lever	1
32	GX326/2	Presser lift top pin	1
33	G016	Top pin cover	1
34	GR046	Top pin cover gasket	1
35	GL12	Top pin cover nut	1
36	GR033	Oil disk	1
37	GBS115	Oil disk round screw	6
38	GKR10	Holder	2
39	GBS109	Holder screw	4
40	GZ20	Knee lifter shaft	1
41	GX219	Knee lifter pin	1
42	GW35	Knee lifter spring	1
43	GR1130	Presser lift joint	1
44	GS292	Presser lift joint screw	1
45	GS292	Presser lift operating lever screw	1
46	GR034	Presser lift crank	1
47	GS290	Presser lift crank screw	1
48	GR1129	Direction-limited joint	1
49	GS292	Direction-limited joint screw	1
50	GKZ2	Presser lift operating lever	1
51	GKR14	Operating plate	1
52	GKR13	Operating plate pad	1
53	GKS103	Operating plate positioner screw	1
54	GKR15	Operating plate positioner	1
55	GKL102	Operating plate position nut	1





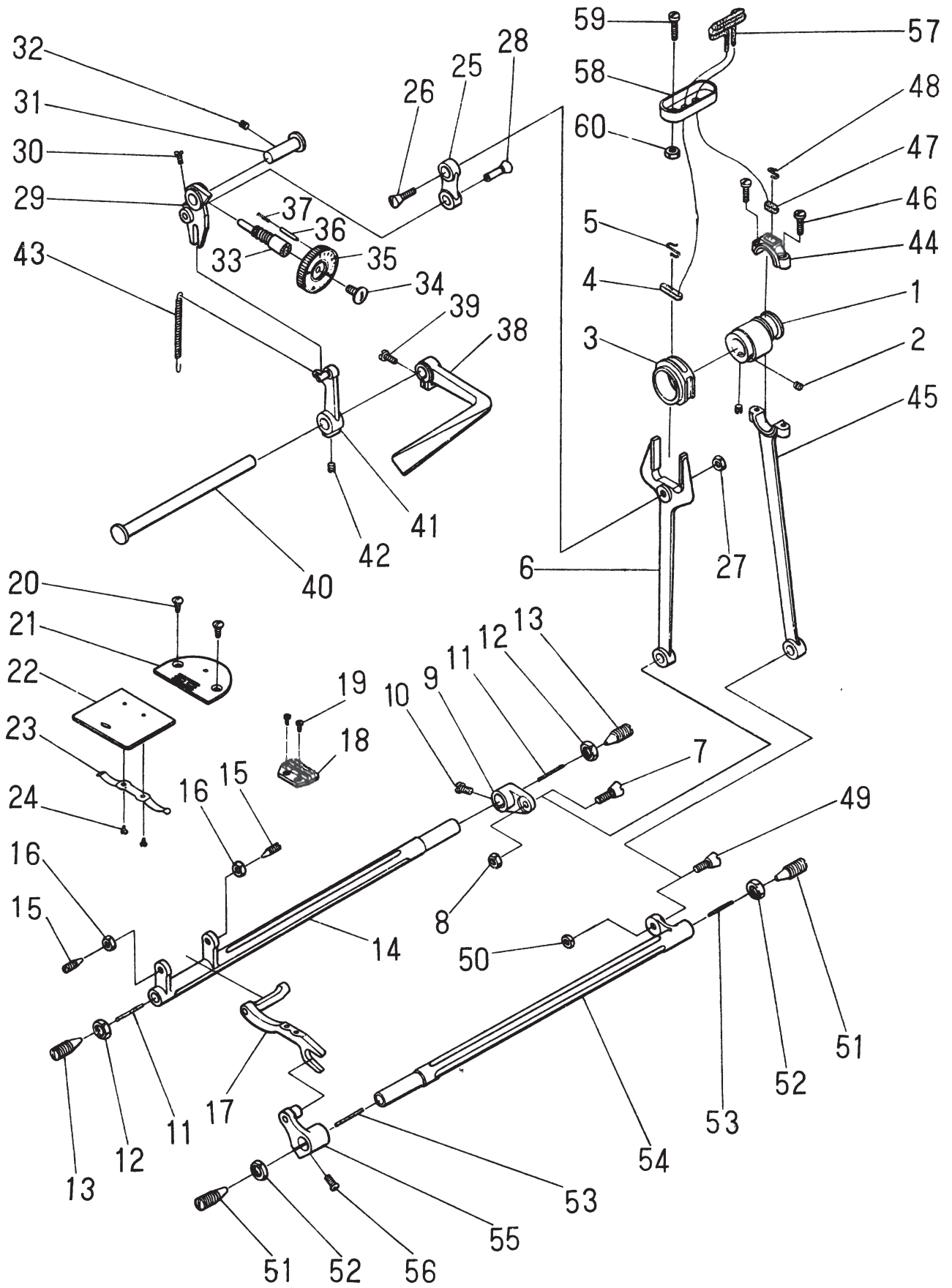
## D.Lower shaft, rotary hook components

Ref.No.	Part. No.	Description	Amt. Req.
1	GR131	Upper shaft bevel gear main cover	1
2	GR132	Upper shaft bevel gear assistant cover	1
3	GS82	Upper shaft bevel gear cover screw	1
4	GC4	Upper shaft bevel gear	1
5	GS39	Upper shaft bevel gear screw	1
6	GC3	Stand shaft upper bevel gear	2
7	GS58	Stand shaft upper bevel gear screw	2
8	GO9	Stand shaft upper bushing	2
9	GS37	Stand shaft upper bushing screw	1
10	GR123	Stand shaft upper bushing oil felt	1
11	GZ14	Stand shaft	1
12	GO10	Stand shaft lower bushing	1
13	GS37	Stand shaft lower bushing screw	1
14	GR123	Stand shaft lower bushing oil felt	1
15	GC2	Stand shaft lower bevel gear	1
16	GS39	Stand shaft lower bevel gear screw	2
17	GR127	Lower shaft bevel gear main cover	1
18	GR128	Lower shaft bevel gear assistant cover	1
19	GS82	Lower shaft bevel gear cover screw	1
20	GZ13	Lower shaft	1
21	GC1	Lower shaft bevel gear	1
22	GS39	Lower shaft bevel gear screw	2
23	GO10	Lower shaft back bushing	1
24	GS37	Lower shaft back bushing screw	1
25	GR123	Lower shaft back bushing oil felt	1
26	GR035	Lower shaft back bushing gasket	1
27	GS39	Lower shaft back bushing gasket screw	1
28	GO9	Lower shaft front bushing	1
29	GS37	Lower shaft front bushing screw	1
30	GR123	Lower shaft front bushing oil felt	1
31	GR121	Rotary hook directional hook	1
32	GR122	Rotary hook directional hook gasket	1
33	GS55	Rotary hook directional hook screw	1
34	GR118/14	Rotary hook	1
35	GR184	Rotary hook cover	1
36	GS73	Rotary hook cover screw	1
37	GR013	Rotary hook cover oil felt	1
38	GR187	Rotary hook guard	1
39	GS75	Rotary hook guard screw	4
40	GR185	Rotary hook holder	1
41	GR186	Rotary hook plate	1
42	GS74	Rotary hook plate screw	3
43	GR120	Bobbin	1
44	GR119/9	Shuttle	1
45	GR188	Bobbin case	1
46	GW32	Shuttle spring	1
47	GS78	Shuttle spring regulating screw	1
48	GS77	Shuttle spring setting screw	1
49	GR189	Shuttle bobbin case latch	1
50	GW31	Shuttle bobbin case latch spring	1
51	Gr190	Shuttle cover	1



## E.Feeding, Lifting bell components

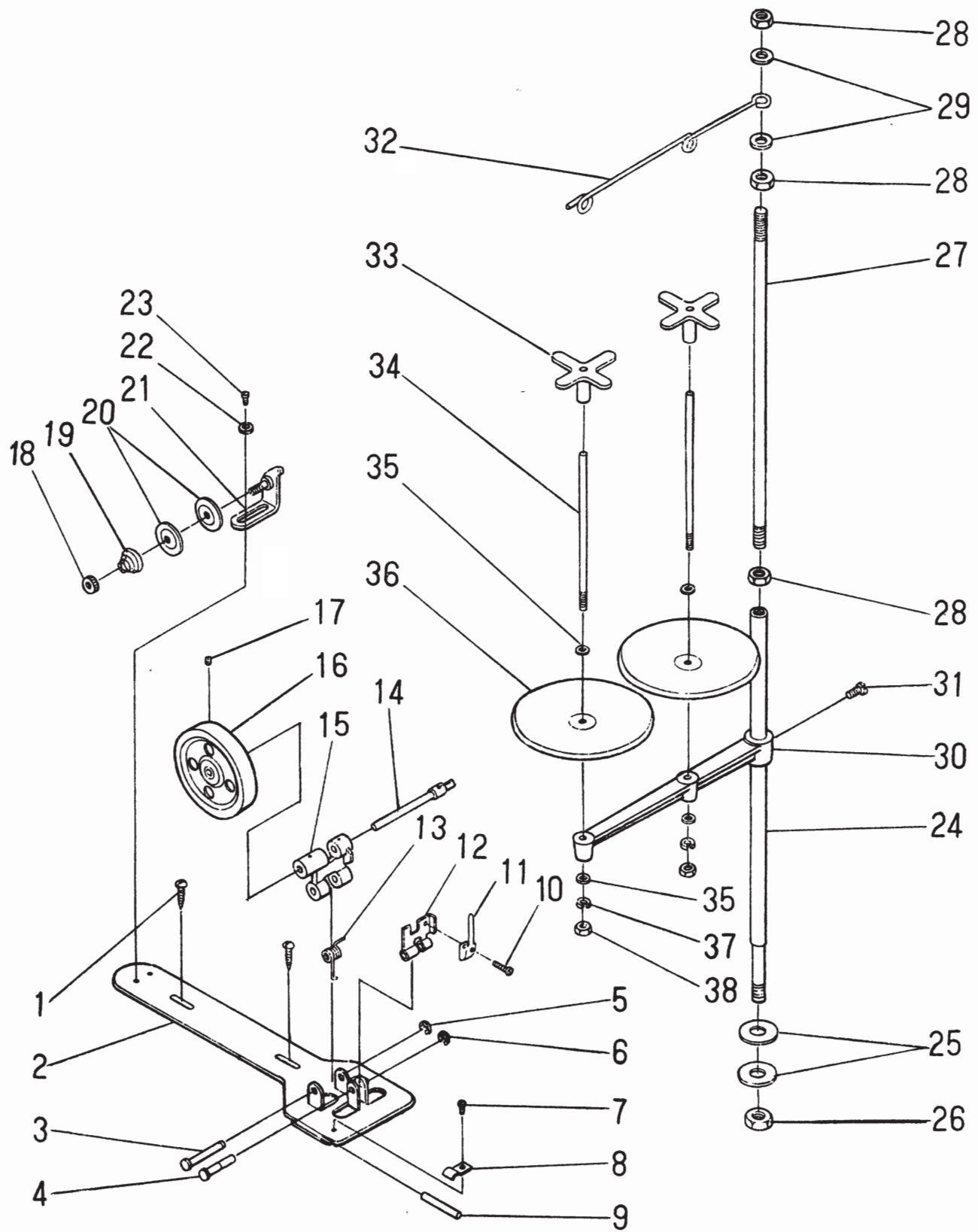
Ref.No.	Part.No.	Description	Amt. Req.
1	GT3	Feeding and lifting bell eccentric	1
2	S19	Eccentric screw	1
3	GR133	Eccentric ring	1
4	GR134	Eccentric ring oil felt	1
5	GW24	Oil felt spring	1
6	GR036	Forked feed bar	1
7	GS59	Feed crank taper screw	1
8	GL7	Feed crank taper screw nut	1
9	GR142	Feed shaft crank	1
10	GS55	Feed shaft crank screw	1
11	GR014	Feed shaft wick	2
12	GL8	Large top nut	2
13	GS64	Feed shaft top nut	2
14	GR143	Feed shaft	1
15	GS65	Small top screw	2
16	GL9	Small top nut	2
17	GR144	Feed bar	1
18	GR145	Feed dog	1
19	GS66	Feed dog screw	2
20	S47	Needle plate screw	2
21	GR146	Needle plate	1
22	GR147	Pushing plate	1
23	GW27	Pushing plate spring	1
24	GS68	Pushing plate spring screw	2
25	GR136	Needle gauge link lever	1
26	GS59	Small tape screw	1
27	GL7	Small taper nut	1
28	GX18	Needle gauge link pin	1
29	GR5279	Needle gauge regulator	1
30	GS61	Needle gauge link pin screw	1
31	GX1032	Needle gauge regulator pin	1
32	S2	Needle gauge regulator pin screw	1
33	GS89	Needle gauge regulator screw	1
34	GS046	Needle gauge plate screw	1
35	GR1536/3	Needle gauge plate	1
36	GX28	Lock pin	1
37	GW22	Lock pin spring	1
38	GR041	Back feed bar lever	1
39	GS55	Back feed bar lever screw	1
40	GZ21	Back feed bar shaft	1
41	GR039/3	Back feed bar	1
42	S2	Back feed bar screw	1
43	GW26	Back feed bar spring	1
44	GR149	Lifting bell crank link cover	1
45	GR150	Lifting bell crank link stem	1
46	GS69	Lifting bell crank link screw	2
47	GR151	Lifting bell crank link oil felt	1
48	GW28	Lifting bell crank link oil felt spring	1
49	GS59	Lifting bell crank link taper screw	1
50	GL7	Lifting bell crank link taper screw nut	1
51	GS64	Lifting bell shaft top screw	2
52	GL8	Lifting bell shaft top nut	2
53	GR014	Lifting bell shaft wick	1
54	GS152	Lifting bell shaft	1
55	GR153/4	Lifting bell crank	1
56	GS55	Lifting bell crank screw	1
57	GR776	Wick	1
58	GR042	Lifting bell feed oil tank	2
59	GS211	Oil tank screw	1
60	GI113	Oil tank nut	1





## F.Thread winder, thread stand components

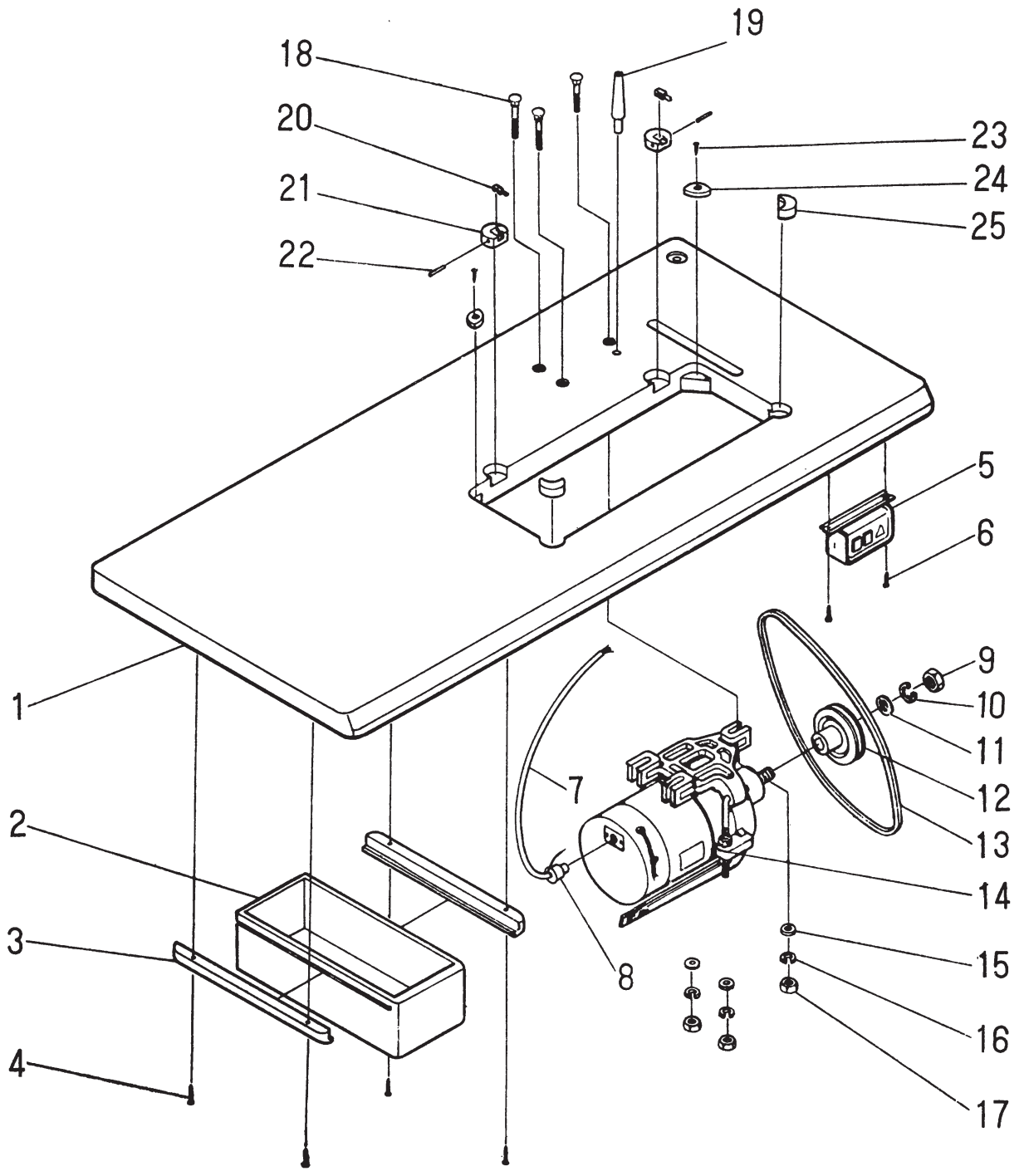
Ref.No.	Part.No.	Description	Amt. Req.
1	GBS104	Winder screw .....	2
2	GR1166	Winder base .....	1
3	GX120	Winding stand pin.....	1
4	GX119	Pin of full thread plate .....	1
5	GR273	Ring for winding stand pin .....	1
6	GR273	Ring for full thread plate pin .....	1
7	GS137	Winding lock clamp screw .....	1
8	GR228	Winding lock clamp .....	1
9	GR201	Winding lock mat.....	1
10	GS286	Full thread plate screw .....	1
11	GW184	Full thread plate spring.....	1
12	GR862	Full thread plate.....	1
13	GW114	Winding stand spring .....	1
14	GZ224	Winding shaft.....	1
15	GR226	Winding stand.....	1
16	GP121/2	Winding wheel.....	1
17	GS134	Winding wheel screw .....	1
18	GL103	Thread guide tension nut .....	1
19	W12	Thread guide tension spring .....	1
20	GR013	Thread guide tension plate .....	2
21	GR1162/2	Thread guide stand.....	1
22	GR122	Thread guide stand washer.....	1
23	GS118	Thread guide stand screw .....	1
24	GZ234	Thread stand lever lower node .....	1
25	GR1243	Thread stand lever lower node washer .....	2
26	GL141	Thread stand lever lower node nut .....	1
27	GZ233	Thread stand lever upper node .....	1
28	GKL101	Thread stand lever upper node nut .....	3
29	GKR122	Thread stand lever upper node washer .....	2
30	GR1211	Double-hole plate stand .....	1
31	GS476	Double-hole plate stand set screw.....	1
32	GR1212	Double-hole thread guide.....	1
33	GR1215	Thread bobbin anti-loosen mat.....	2
34	GS477	Thread plate screw .....	2
35	GKR124	Thread plate screw washer .....	4
36	GR1811	Thread plate .....	2
37	GR1214	Thread plate screw spring washer .....	4
38	GL107	Thread plate screw nut.....	2





## G.Sewing, plate electrical equipment, components

Ref.No.	Part.No.	Description	Amt. Req.
1	GBR108	Table	1
2	GBR105	Drawer	1
3	GBR106	Drawer guide rail	2
4	GBS102	Drawer guide rail screw	4
5	GD227	Power switch	1
6	GBS104	Power switch screw	2
7	GD108	Power wiring	1
8	GD219	Power wiring plug	1
9		Electrical motor tape wheel set nut	1
10		Electrical motor tape wheel spring washer	1
11		Electrical motor tape wheel washer	1
12	GD113	Electrical motor tape wheel	1
13	GE104	Machine head driven tape (model O. No.100)	1
14	GD220	370/2800 right tape wheel clutch electric motor	1
15	GKR209	Electrical motor plate screw washer	3
16	GKR106	Electrical motor plate screw spring washer	3
17	GKL101	Electrical motor plate screw nut	3
18	GKS122	Electrical motor plate connecting screw	3
19	GBR111/2	Machine head column	1
20	GBR110	Machine head connecting hook	2
21	GBX101	Machine head connecting hook holder pin	2
22	GBR130	Machine head connecting hook holder	2
23	GBS112	Machine head mat screw	2
24	GBR112	Machine head mat (s)	2
25	GBR131	Machine head mat	2



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## F. Machine stand components

Ref.No.	Part.No.	Description	Amt. Req.
1	GKR193/5	Stand side asm. ....	2
2	GKR194	Rubber cushion .....	4
3	GKL104	Nut .....	4
4	GKR196/2	Screw.....	4
5	GKR198	Space ring.....	4
6	GKR173/3	Stand side support asm. ....	1
7	GKS119	Screw .....	4
8	GKR176	Spring washer .....	4
9	GR253	Washer.....	4
10	GKR178/3	Treadle brace asm. ....	1
11	GKS110	Screw .....	2
12	GLR122	Washer .....	2
13	GLT106	Spring washer.....	2
14	GKR181	Treadle brace lock nut plate .....	2
15	GKX106	Treadle shaft .....	1
16	GKR184	Treadle bracket .....	2
17	GLS110	Screw .....	2
18	GLR122	Washer .....	4
19	GLR106	Spring washer .....	2
20	GKL101	Nut .....	2
21	GKR182	Treadle.....	1
22	GKR111	Treadle pitman .....	1
23	GLS102	Screw.....	2
24	GKR112	Washer .....	2
25	GKL102	Nut .....	2
26	GKT116	Pitman rod, Lower .....	1
27	GKR118	Pitman rod, upper .....	1
28	GKR183	Joint.....	1
29	GKS110	Joint screw .....	1
30	GKL101	Joint nut .....	1
31	GLX101	Pitman rod split pin(upper) .....	1
32	GBS114	Table wood screw .....	4
33	GLR112	Table wood screw washer .....	4
34	GLR186	Table washer .....	4

