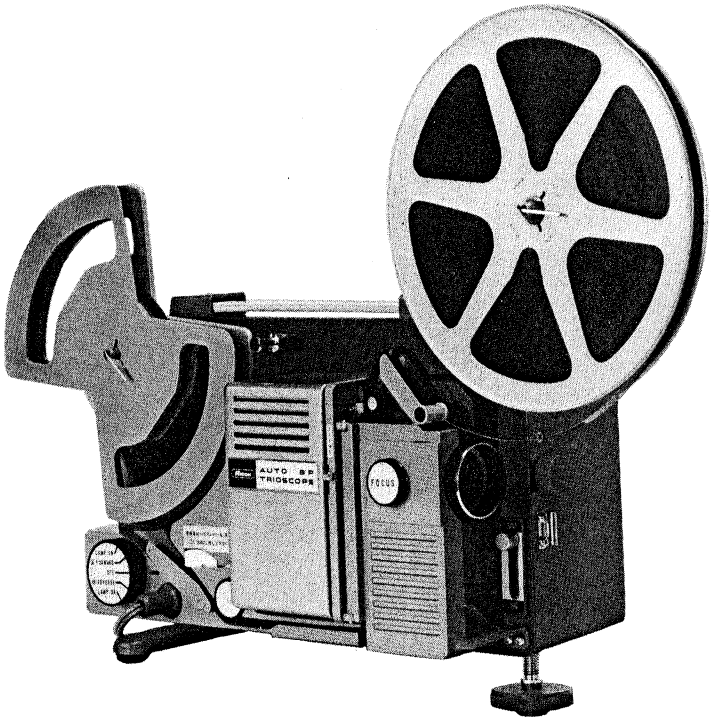


REPAIR MANUAL
AND REPAIR PARTS

RICOH AUTO 8P TRIOSCOPE

RICOH

RICOH, CO., LTD.

Table of Contents

SPECIFICATION

Projection Lens	RIKENON P F.1.3 15～25 mm
Lamp for light source	Low voltage projecting bulb 8V, 50 W. S Isometer focusing type lamp
Power Source	For export, 115, 125, 160, 220 and 240 V, 50-60 Hz
Motor	D. C. Shunt Motor
Film Loading	Full Auto Loading (Ricoh Auto 8P Reel is used.)
Projecting Speed	14-20 frames/sec. Successively variable
Projecting angle of elevation	Up to 7 ove rhead
Capacity of Reel	120 m (400 ft.)
Film	Regular 8, Super 8 and Single 8
Size	311(length) x 164(width) x 184 (height) mm
Weight	5.6 Kg

RATED SPECIFICATION OF MAIN PARTS

Motor (450378)

Type and Name	DC Shunt Motor, 2 poles
Power	19 W
Voltage	100 V
Current	0.38 A or less
Frequency	
Load	150 g-cm
Revolution	5,500 ± 500 r.p.m.
Starting Torque	900 g-cm or more (Rf= 200 ohm)
Stopping Torque	1,000g-cm or more (Rf=200 ohm)

Transformer (450202)

Type and Name	Single phase Compound Transformer
Input Voltage	100, 115, 125, 160, 220 and 2,400
Output Voltage	80 ± 0.2 V, 100 ± 5 V
Output Current	6.85 A, 0.5 A
Frequency	50/60 Hz
Voltage Variation	20% or less

Projecting Bulb (450500)

Type and Name	Mirror Condenser Type Projecting Bulb
Lighting Voltage	8 V
Input Power	50 ± 5 W
Focusing	33.5 mm
Nominal Life	25 H
Lighting Location	Vertical
Type of Projection	Focusing

1. DIRECTIONS FOR OPERATION

1-1 Prior to Operation

Prior to insert plug into power supplying source, rotate a power supply transfer switch on the botton of main body by a driver in order to adjust to the voltage of the power supplying area. (Fig. 1)

* As for winding reel, apply the Ricoh Auto 8P Reel, an accessory to main body (inside of cover) without fail. This reel is specially designed to perform autoloading satisfactorily.

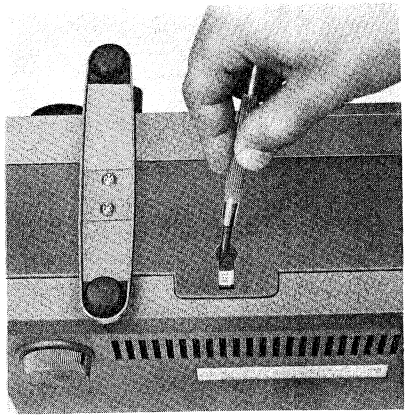


Fig. 1 Voltage Indicating Window

* Pay attention to the following sort of film which may cause some defects:

(a) A tip of film is extremely bent.

Defect: While autoloading, this film shall become unable to be fed and damaged, with the film stuck inside filmguide.

(b) A film perforation is damaged.

Defect: As this machine feeds film only by claw, this film shall be stopped at the damaged perforation and the screen shall be burnt.

In cases as above, cut the tip of the film by film cutter. (See Fig. 2)

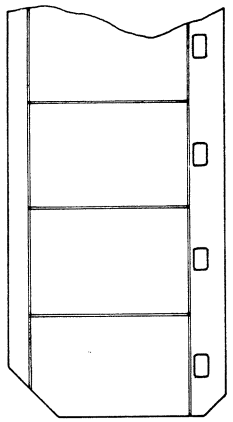


Fig. 2

2. MECHANISM OF EACH PART

2-1 Outline of Mechanism

(1) Driving Mechanism

With the projecting switch on forward position, motor revalves counterclockwise to drive the shutter shaft roller (idler) clockwise.

The shutter shaft is provided with a cam and a worm gear and the former vertically moves the film, raking click to the direction of raking down and simultaneously rotates 3 ea. of shutter blades while the latter drives the helical gear which in turn drives the film feeding reel shaft and the film winding reel shaft by the hooklink chains. (Fig. 3)

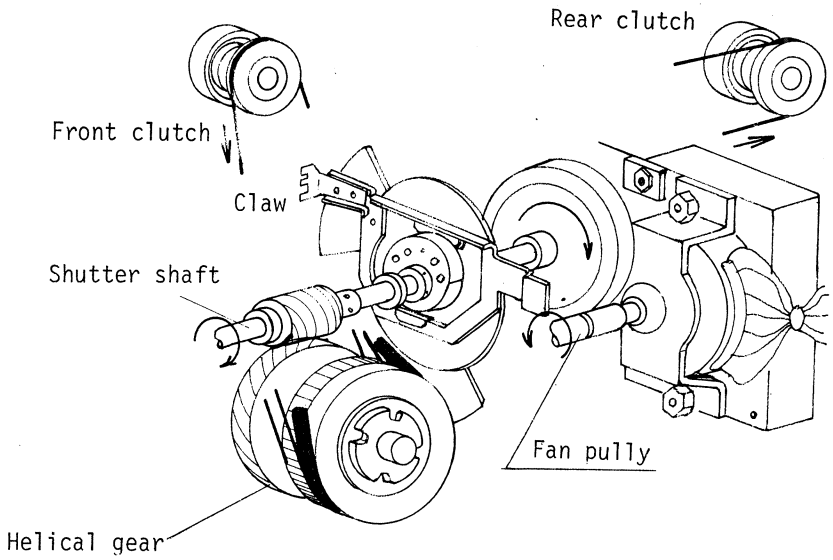


Fig. 3

(2) Film Feeding Mechanism

(a) In case of normal revolution (looking from front side, clockwise revolution of shutter shaft), the power with which clicks drive film from up to down shall feed film to the winding reel shaft along film guide.

The front clutch races and free from the reel shaft driving mechanism while the rear clutch revolves clockwise (looking from the side shown in the right side drawing) and drives the winding reel shaft driving mechanism while the rear clutch revolves clockwise (looking from the side shown in the right side drawing) and drives the winding reel clockwise.

(b) In case of reverse revolution (looking from front side counterclockwise revolution of shutter shaft), the clicks drive film from down to up and thus feed film back to the feeding reel.

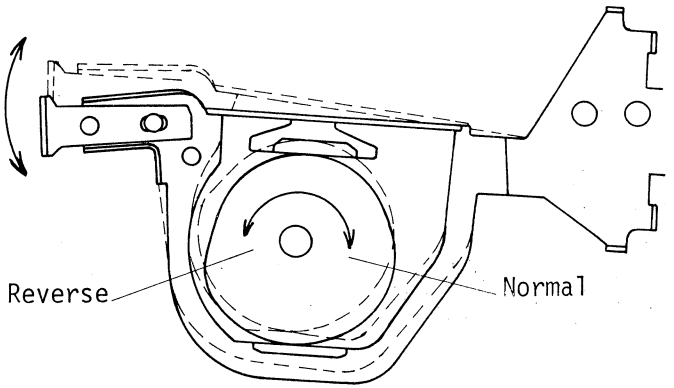


Fig. 4

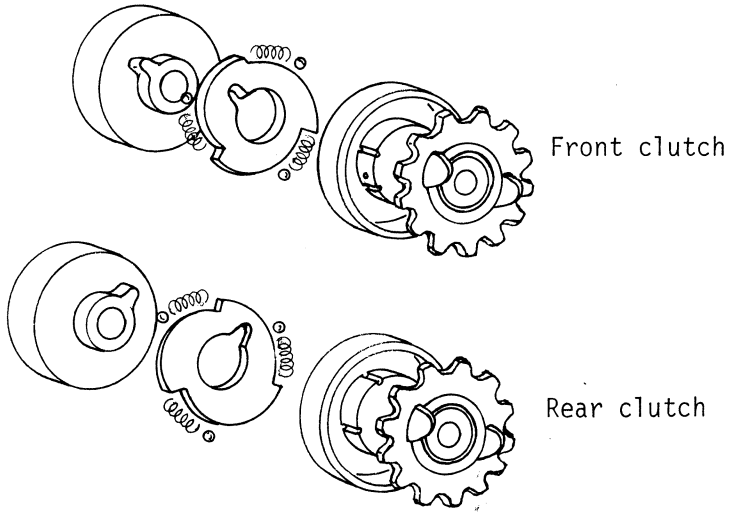


Fig. 5

2-2 Driving Mechanism

(a) Driving status in normal revolution (direction of film feeding).

- o Motor shaft revolves counter clockwise.
- o Shutter shaft revolves clockwise by the friction between shutter shaft roller and fan pulley.
- o By the driving power of shutter shaft, cam revolves to move clicks vertically and to rotate 3 ea. of shutter blades simultaneously.
- o In case shutter shaft revolves, the worm gear fixed to this shaft shall be rotated and the helical gear engaged with this wormgear shall be rotated to the direction of arrow mark so as to drive both of clutch front and clutch rear by means of hooklink chains, (54 and 132).
- o The frictional pressure valve between shutter shaft roller and fan pulley shall be adjusted by the pressure adjusting screws located on the shutter shaft roller in the lamp house and a little left side from the center of the projecting lever.

(b) Driving status in reverse revolution

The operation of driving mechanism is basically the same as in the case of normal revolution, except the revolving direction is reversed. However, in this case, the revolving direction of clutch front and rear reversed, the clutch rear shall be raced and the clutch front shall rotate to drive the film feeding reel shaft to the direction of feeding film back to the feeding reel.

Fig. 5 illustrates the composition of clutch front and rear.

2-3 Switching Mechanism between Super 8 Film and Regular 8 Film (Fig. 6)

One of the features of this projector is the capability of projecting Super 8 and Single 8 films besides the Regular 8 film.

There being difference of sizes concerning projection, perforation and pitches between Regular 8 and Super 8 (Single 8), a switching mechanism is provided to deal with these differences between films. This mechanism is easily operated by moving a knob on film cutter vertically.

This mechanism is illustrated in the following Figure. W and S indicate Regular and Super respectively.

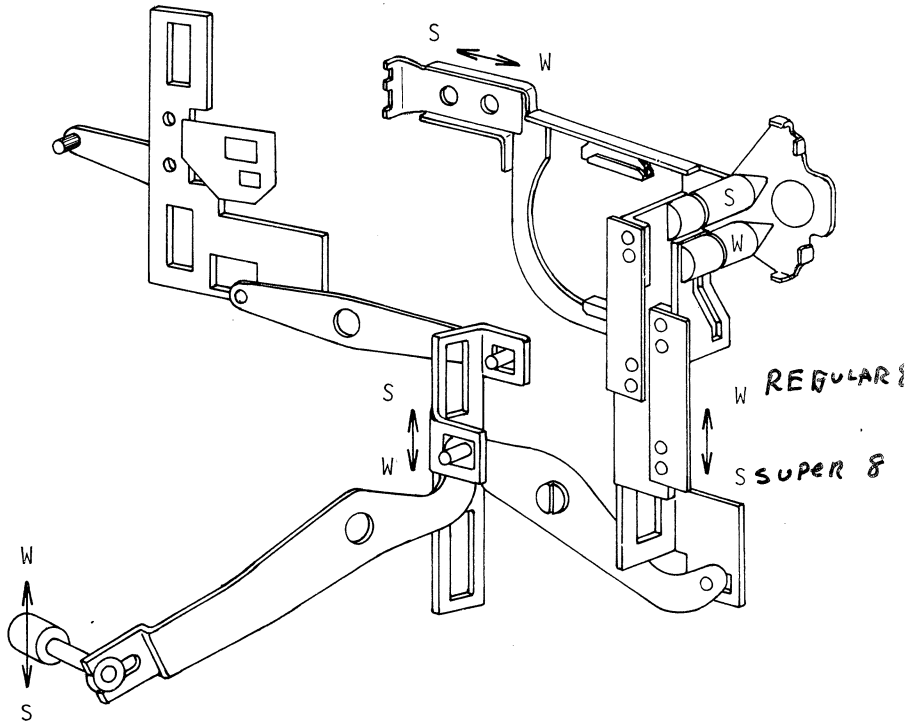
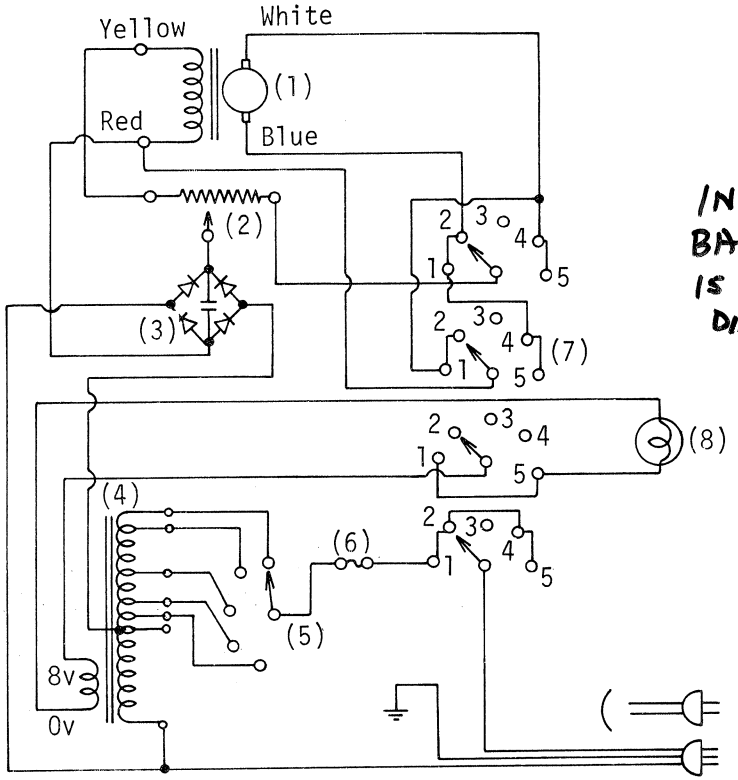


Fig. 6

2-4 Electrical Unit

o Electric power from the power supplying (100V 240V, 50/60 Hz) cord is supplied to the input terminal of power transformer and 100V (for energizing motor) and 8V (for projecting lamp) is induced in the output side.



INSIDE BACK COVER IS WIRING DIAGRAM

(1) 450378	Moter	(5) 450217	Votage Switch
(2) 450202	Speed resistor	(6) 117004	Fuse
(3) 142072	Rectifire	(7) 450777	Rotary Switch
(4) 450202	Transformer	(8) 132025	Lamp

Fig. 7

On the left wiring diagram, the operational orders of the rotary switch (450777) counted clockwise are as follows:

1. Reverse, Lamp
2. Reverse
3. Off
4. Forward
5. Forward, Lamp

The above diagram indicates the status of 2 Reverse.

3. DISASSEMBLING PROCEDURES OF MAIN PARTS

3-1 Shutter Shaft (See page 20)

(a) Push one frame lever and disconnect the idler 450108 with fan pulley 450006

(b) Loosen the ball receiver screw fixing the mirror barrel and drawing out 450313, remove the spring (450318).

(c) Loosen screws of wormgear, cam and idler (450394, 450608 and 450108 respectively) which are fixed on the shutter shaft (450393).

(d) Draw out shutter shaft.

(e) Take off 2 ea. of screws (018308B) and remove the ball receiver (450312) fixed on mirror barrel supporting main body (450004). (Fig. 8)

IF LAMP DOESN'T WORK - CHECK ORANGE WIRE CONTACT (TOP + BOTTOM) ON SWITCH

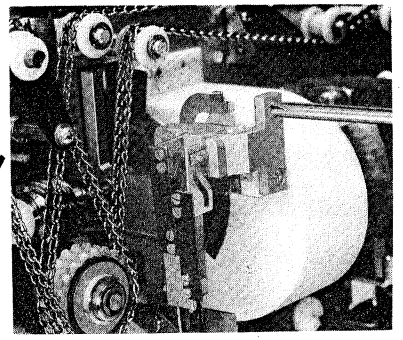


Fig. 8

Note: The thrust clearance of shutter shaft shall be 0.05 0.1 mm.

One each of fixing screws of wormgear, cam and idler shall be in the V channel of shutter shaft.

In case shutter shaft is drawn out for repair, adjust the thrust clearance after fixing to 0.05 1.0 mm without fail.

3-2 Disassembling of Feeding Shaft (See page 20)

(a) Take off the screw (081010) fixing the clutch spring (450432) and remove this spring and clutch (450431).

(b) Loosen 2 ea. of screws fixing the triangle ring guide (450409).

(c) Take off E ring (050104G) fixed on the shaft and draw out the whole clutch unit from the shaft, at this time, please take care not to make balls (3 ea.) in the triangle ring and coil springs (3 ea.) spring outside.

(d) Pull the feeding shaft (450410) to the arm side and remove it.

Note: In case of reassembly, please make sure that the feeding shaft and arm bearing rotate smoothly.

3-3 Removing of Motor (See page 22)

(a) Take off 3 ea. of screws (081010) fixing the fan case (450008) and remove the latter.

(b) Take off 2 ea. of screws (0717306B) fixing the motor protecting panel and power supplying voltage transfer switch (450007, 450216-1) and remove these items.

(c) Scrape off the solder of 4 colored leas wires, i.e., red, blue, yellow and white, out of the motor (450378).

Red	.....	Rotary switch (450777)
Blue	.....	" " "
Yellow	.....	Enameled variable resister (450214)
White	.....	Rotary switch (450777)

4. PROCEDURES OF ADJUSTMENT

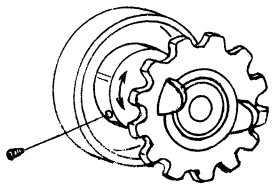
4-1 Adjustment of torque for feeding and winding

(This is the re-adjustment in case winding force is too strong or too weak.)

(a) Adjust torque by turning the round-nut after loosening the worm-screw (031320B) of the round-nut of the triangular ring bush. (Fig. 9)

(b) When the wind or rewind tension is too weak or too strong, make sure the clearance of 0.1~0.2 mm. (Fig. 10)

(c) This torque is sufficient when the film can be wound without slack with the reel wound by 400 feet of film set on the reel for 400 feet.



031302B

Fig. 9

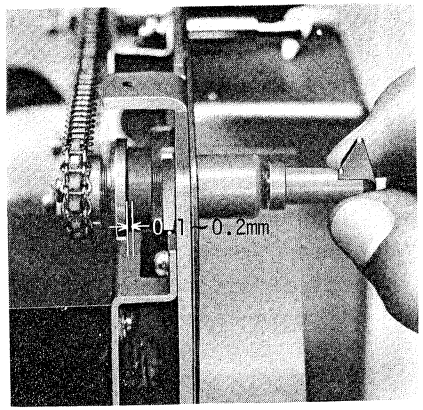


Fig. 10

4-2 Adjustment of the click

(Super 8 Film is used.)

(a) Loosen two screws fixing the cam to the shutter shaft and adjust the click at the maximum height of 0.8 1.0 mm from the gate. (Fig. 11)

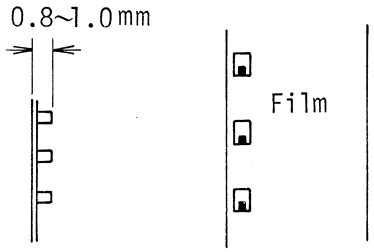


Fig. 11

(b) Loosen four screws (005422N) fixing the film gate (450023) to the mirror barrel supporting main body (450004).

(c) Against the gate on either side with the click in any place, not to hit the perforation, with super film set to gate and the shutter shaft rotated. (Fig. 11)

4-3 Adjusting of the clearance between the shutter shaft roller and the fan pulley

(Adjust the clearance between the idler of the shutter shaft (450108) and the fan pulley (450006) to 0.3~0.6 mm with one frame projecting lever pushed inside.)

(a) Loosen two set-screws (000430B) of one frame lever B (450483) on the lamp stand (450119). (Fig. 12)

(b) Loosen the nut (049063B) on the front side of one frame lever B and turn the screw (017308B), and adjust the location of one frame lever and the clearance in case of one frame projection. (Fig. 12)

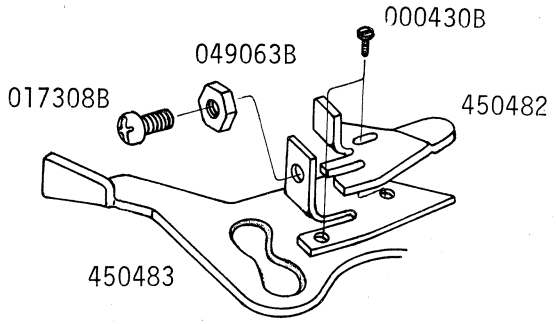


Fig. 12

4-4 Adjustment of Pressure of the Fan Pulley

(a) Wipe the idler with alcohol before adjusting.

(b) Push one frame lever into the continuous projecting condition, and loosen the nut (049063B) of the adjusting screw, (the screw (010320B) on the base panel between one frame projecting lever and the idler with the lamp house removed), and then separate the idler from the fan pulley by turning the screw to the right. (Fig. 13)

(c) Evenly contact the idler with the fan pulley by turning the one frame feeding knob (450107) rotating the screw to the right. (Turning condition with contact.)

(d) Tighten the nut, turning the set-screw 1.5 revolution to the left.

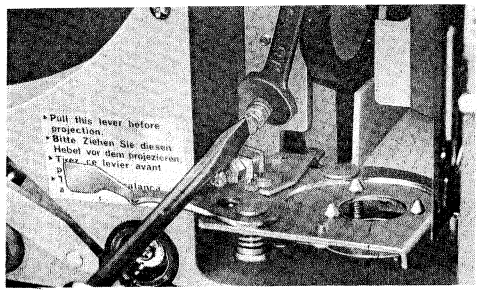


Fig. 13

4-5 Adjustment of Illumination

(a) Adjust the screws (017306B) for adjusting illumination (lamp stand 450119) in order to evenly distribute the intensity of illumination all over the screen.

The screeen under adjustment is approx. 50 cm in width while no film is projected.

Focus the film to the aperture frame so as to make the screen exactly rectangular.

The conditions and adjusting procedures are shown as follows.

(a) Procedures:

In this machine, as pictures will appear on the screen after loading films, in order to get them without loading films. Push the roller C and keep that positions with piece of papers

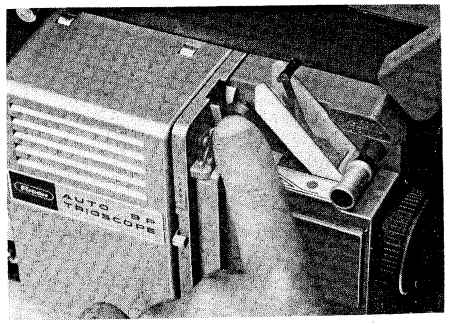
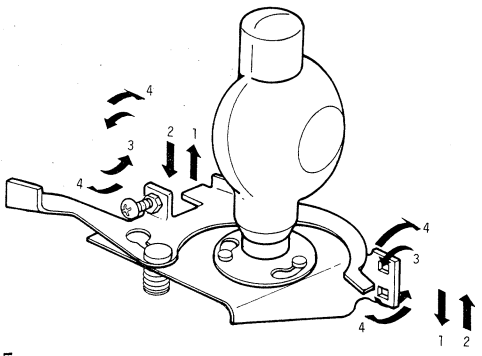


Fig. 14

Adjusting Procedures	Condition
 Fig. 15	In condition 1, loosen four screws tightening the lamp stand and incline the lamp stand to the direction of arrow-mark, and after adjustment tighten the screws again. In condition 2, loosen 4 screws tightening the lamp stand and incline the lamp stand to the direction of arrow-mark, and after adjustment tighten the screws again. In condition 3, tighten the upper two of 4 screws tightening the lamp stand normally and then tighten the lower two of them firmly. In condition 4, tighten the lower 2 of 4 screws tightening the lamp stand and then tighten the upper two of them firmly.

All the other conditions except the said 4 conditions being just the combination of the four, the adjusting procedures shall be same as the above.

5. CHECKING ITEMS FOR EACH PART

After a repair or a periodic service, please check the following items, find out mis-repair or trouble-causing factors, and prevent troubles in advance.

5-1 The voltage change-over switch operates surely, and such output voltage as 100V ± 5V can be obtained for each input voltage of 100V~240V between 0V~100V terminals of power transformer and 7.8 ± 0.2V between 0V ~ 8V terminals.

5-2 Both normal and adverse revolution shall be energized with the speed rheostat at minimum.

5-3 Change in machine torque energized upon the shutter shaft shall not cause slipping between the shutter shaft roller and the fan pulley.

5-4 Clearance between the shutter shaft roller and the fan pulley shall be approx. 0.3~0.6 mm in case one frame projecting lever is pushed.

5-5 Turning by hand the hand knob of the shutter shaft shall not feel any extremely heavy load.

5-6 Allowance of the shutter shaft for thrust shall be 0.05~0.1 mm between the bearing metal of the shutter shaft support and the worm gear.

5-7 The edges of the clicks shall set each film (regular 8, super 8 and single 8) and locate at the centre of the perforation of each film, and shall not contact with the perforation on both sides in case of vertical movements.

5-8 The framing shall be within the limit of being unsusceptible to mechanical or other external vibrations.

5-9 In case of assembling or disassembling of the fan case, the fan and the shutter brade shall not contact with the fan case.

5-10 No looseness shall be allowed in the set-screws of the helical worm-gear, the click (cam), the shutter shaft roller and the fan pulley.

5-11 The both sides of the hook link chains shall be fixed adversely.

5-12 In normal revolution, the front clutch races, and the rear clutch shall be clutched and shall drive the film winding shaft. In adverse revolution, the rear clutch races and the front clutch shall be clutched and shall drive the feeding shaft.

5-13 In case 400 feet of films are to be set, the winding torque and feeding torque shall be sufficient so as to wind and feed the films satisfactorily.

5-14 When the projection changes from continuous to stopping projection, the dim lights filter, at first, shall be shut and then motor operation shall be ceased.
When the projection changes vice versa, the motor operation shall be started at first, and then the dim light filter shall be opened.

5-15 No pictures projected on the screen shall be clipped laterally.

5-16 No pictures projected on the screen shall be fluctuated both longitudinally and laterally in case the screen is projected to be 50 cm in width, the amount of screen fluctuation shall be within 3 mm for R and 2 mm for S.

5-17 In case of projection without loading any film (lamp lighted), no extreme uneveness of illumination shall be found on the screen

5-18 The speed rheostat shall be provided with a considerable allowance of variation so as to eliminate flickers on the projected screen.

5-19 The lens holder is firmly clamped by the lens holder spring and shall have no clearance.

5-20 The lamp house shall be firmly pressed by the spring and shall neither get out of place with a shock nor resonate with a vibration of motor, etc.

5-21 The reel pressing panel of the winding shaft and the feeding shaft shall be firmly clipped and no reel shall get out of place during projection.

5-22 The film cutter shall cut off films in a regular shape.

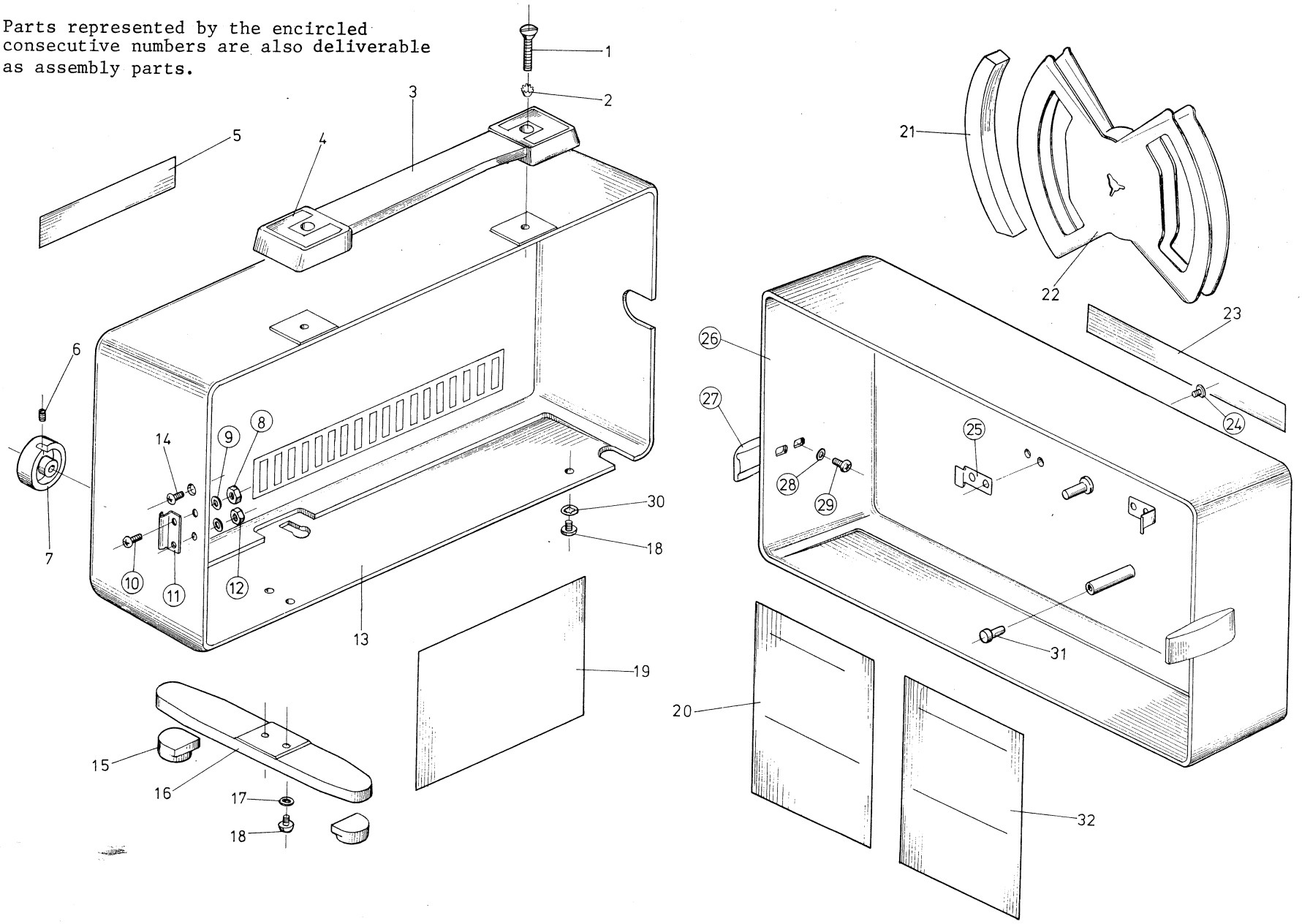
5-23 The change-over lever of Regular 8 and Super 8 shall operate accurately.

5-24 The lock shall not get out of place by motor vibration with one frame projecting lever pressed.

5-25 The film pressing panel shall operates sharply.

5-26 As for electric wiring, no mis-wiring, bad soldering or short circuit (or probable short circuit), etc. shall be permitted.

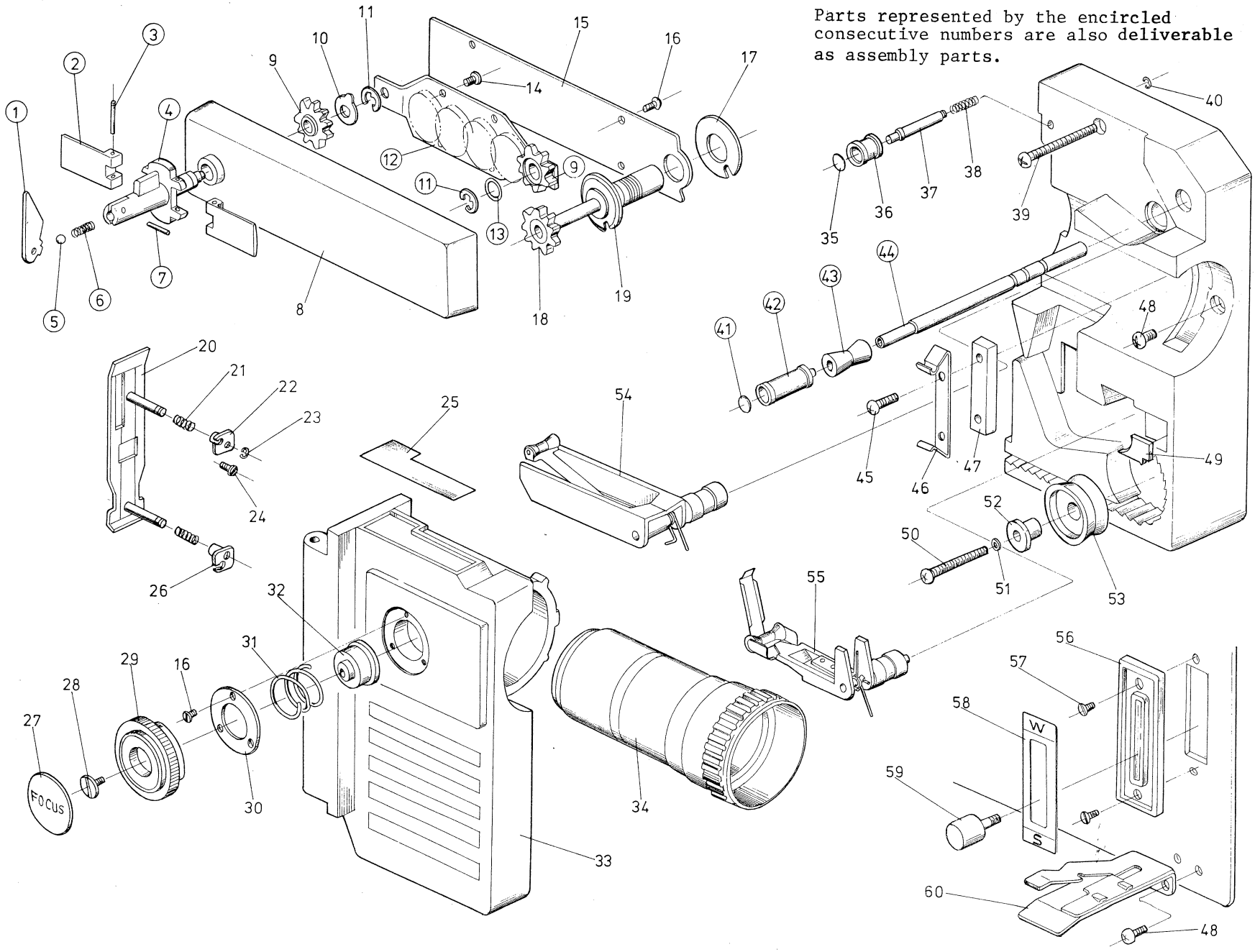
Parts represented by the encircled consecutive numbers are also deliverable as assembly parts.



INDEX NO.	PART NO.	PART NAME
1	019420D	Screw
2	087353	Toothed lock washer
3	450170	Handle ass'y
4	450757	Band cover
5	450574	Rating plate (U.S.A) 50, 60 c/s
	450575	Rating plate (Europe) 50/60 Hz
	450785	Rating plate (Switzland)
6	034304B	Screw
7	450729	Knob: speed control
(8)	049063B	Nut
(9)	07040030B	Washer
(10)	017308B	Screw
(11)	450498	Click
(12)	084910	Nut
(13)	450104	Body
(8)~(13)	450076	Body ass'y
14	018308B	Screw
15	450174	Rubber: back foot
16	450163	Back foot
17	049573	Washer
18	017410B	Screw
19	450503	Wiring diagram (U.S.A)
	450511	" (Europe)
	450514	" (Deutsch)
	450558	" (Australia)
	450789	" (Switzland)
	450795	" (Holland)
	450847	" (Sweden)
20	450515	Caution sticker (English, Deutsch)
21	450741	Cushion
22	450030	Reel ass'y
23	450571	Name plate: body cover
(24)	042204R	Rivet
(25)	450415	Spring: reel holder
(26)	450103	Body cover
(27)	450034	Lock ass'y
(28)	049653B	Washer
(29)	017306B	Screw
(24)~(29)	450075	Body cover ass'y

INDEX NO.	PART NO.	PART NAME
30	049654B	Washer
31	450775	Spacer
32	450516	Caution sticker (Franch, Spanish)

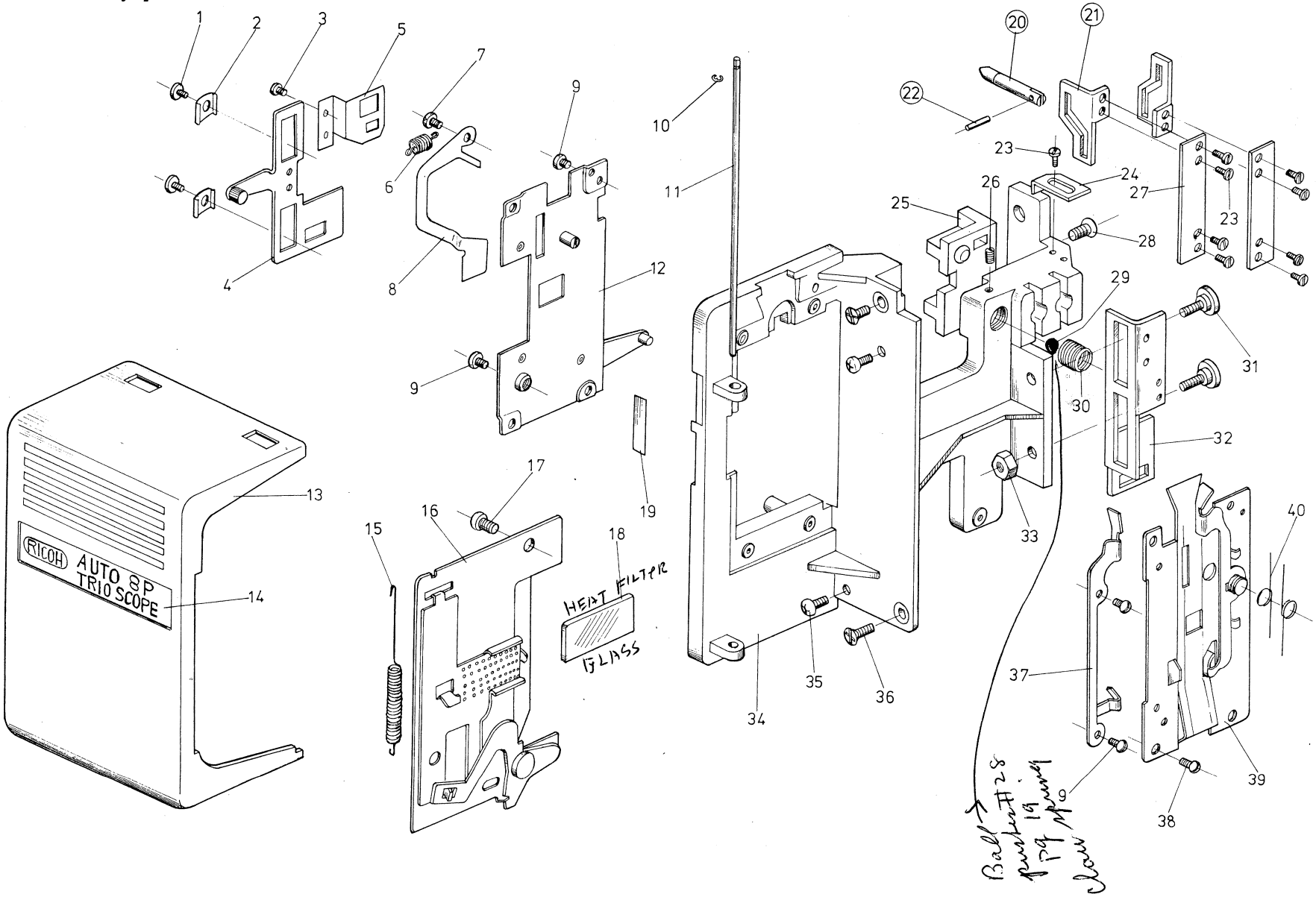
Parts represented by the encircled consecutive numbers are also deliverable as assembly parts.



INDEX NO.	PART NO.	PART NAME
(1)	450429	Reel holder
(2)	450426	Plate: reel shaft
(3)	450610	Pin: reel shaft plate
(4)	450425	Reel shaft: let out arm
(5)	450759	Steel ball
(6)	450611	Spring: reel holder
(7)	450427	Pin: reel holder
(1)~(7)	450017	Let out reel ass'y
8	450418	Arm: let out
(9)	450422	Gear: let out arm
10	450707	Stopper: reel shaft
(11)	085005	Retaining ring
(12)	450016	Gear base plate
(13)	450424	Washer
(9)~(13)	450059	Arm gear ass'y
14	000430B	Screw
15	450416	Plate; let out arm
16	006430B	Screw
17	450412	Spacer: let out arm
18	450043	Let out shaft ass'y
19	450411	Holder: arm shaft
20	450024	Pressure plate ass'y
21	450366	Spring: pressure plate
22	450539	Hold shaft: pressure plate
23	050012G	Retaining ring
24	000460B	Screw
25	450377	Guide plate: film insert
26	450540	Hold shaft: pressure plate
27	450375	Decoration plate: focus knob
28	450374	Screw
29	450373	Focus knob
30	450822	Stop plate: focus knob
31	450825	Spring: focus knob
32	450823	Focus shaft
33	450305	Lens holder
34	450569	Zoom lens
(35)	450709	Decoration plate: roller C
(36)	450447	Roller C
(37)	450534	Shaft: roller C

INDEX NO.	PART NO.	PART NAME
(35)~(37)	450039	Roller C ass'y
38	450533	Spring: roller C
39	017316B	Screw
40	050020G	Retaining ring
(41)	450532	Decoration plate: clutch knob
(42)	450437	Clutch knob
(43)	450436	Roller A
(44)	450433	Clutch shaft
(41)~(44)	450053	Clutch shaft ass'y
45	017308B	Screw
46	450367	Spring: lens hold
47	450368	Spacer
48	017305B	Screw
49	450506	Guide plate: film transport
50	017335B	Screw
51	049653B	Washer
52	450712	Collar: guide roller
53	450458	Guide roller
54	450041	Tension lever A ass'y
55	450042	Tension lever B ass'y
56	450339	Guide: change knob
57	006750B	Screw
58	450576	Guide plate: change knob
59	450341	Change knob
60	450485	Film cutter

Parts represented by the encircled consecutive numbers are also deliverable as assembly parts.



INDEX NO.	PART NO.	PART NAME
1	450361	Screw
2	450358	Spring: aperture change plate
3	000416	Screw
4	450045	Aperture change plate
5	450564	Frame plate
6	450479	Spring
7	450477	Screw
8	450476	Shade plate
9	450568	Screw
10	050012G	Retaining ring
11	450369	Shaft: lens holder
12	450038	Heat preventer A
13	450154	Lamp cover
14	450572	Name plate: lamp cover
15	450481	Spring
16	450027	Heat preventer B
17	017305B	Screw
18	450141	Heat filter
19	450364	Frame plate
(20)	450320	Claw shaft
(21)	450321	Guide plate: claw shaft
(22)	450322	Pin: claw shaft
(20)~(22)	450011	Claw shaft ass'y
23	000430B	Screw
24	450531	Adjust plate
25	450311	Ball holder
26	031425B	Screw
27	450323	Spring plate
28	018308B	Screw
29	450759	Steel ball
30	450313	Screw: steel ball hold
31	450325	Screw
32	450324	Plate B: shaft change
33	049063B	Nut
34	450004	Body: frame holder
35	017305B	Screw
36	018308B	Screw
37	450344	Film guide plate
38	005430N	Screw

INDEX NO.	PART NO.	PART NAME
39	450023	Film gate ass'y
40	450749	Spring: film guide

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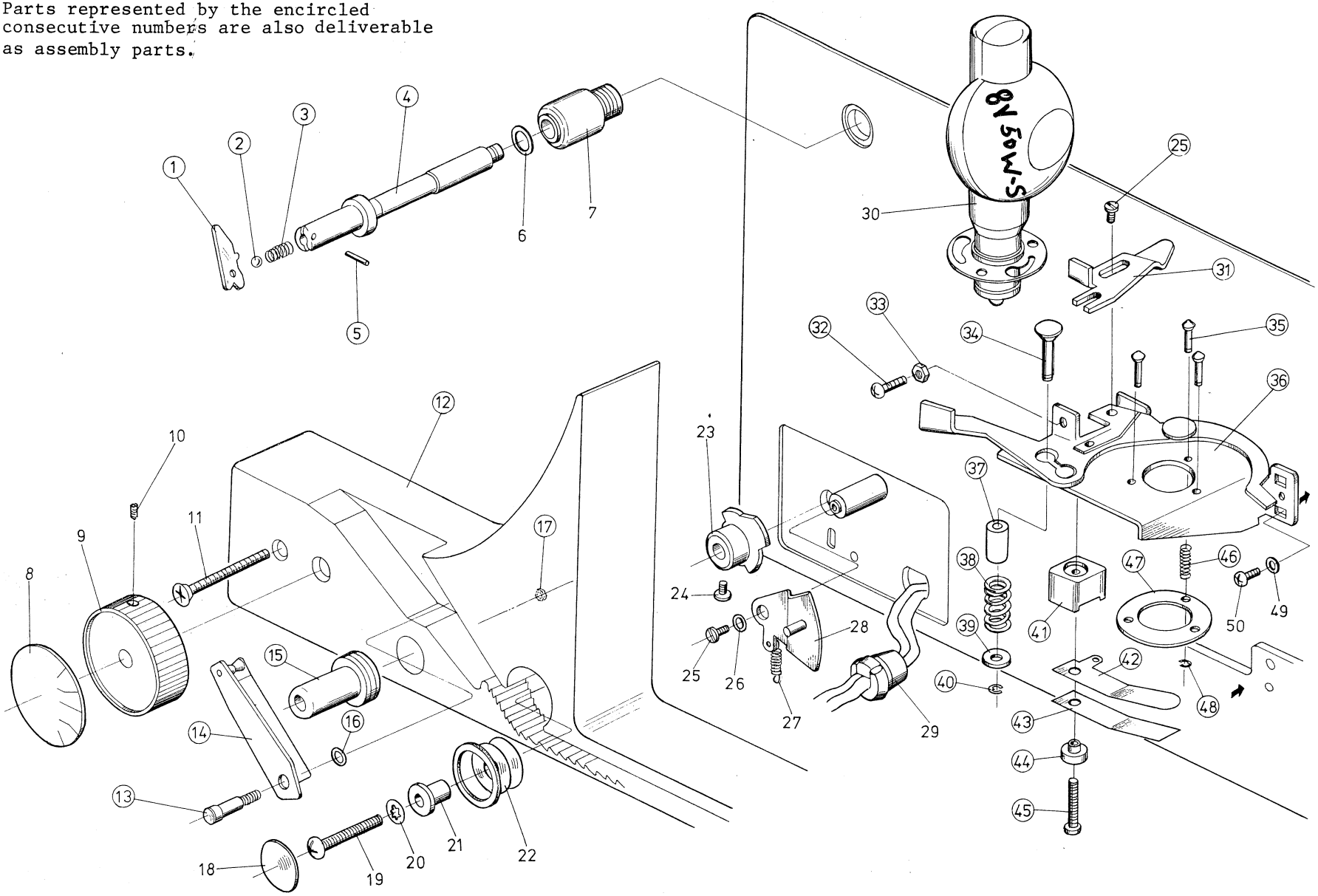

INDEX NO.	PART NO.	PART NAME
(1)	450609	Reel holder: winding up
(2)	450759	Steel ball
(3)	450611	Spring: reel holder
(4)	450522	Shaft: winding up
(5)	450610	Pin: winding up reel
(1)~(5)	450051	Winding up reel a'ssy
6	450408	Washer
7	450413	Holder: winding up shaft
8	450155	Name plate: switch knob
9	450726	Switch knob
10	034304B	Screw
11	450553	Screw
(12)	450035	Film guide
(13)	450462	Screw
(14)	450048	Film guide lever a'ssy
(15)	450744	Cord suportor
(16)	049514B	Washer
(17)	049014B	Nut
(12)~(17)	450049	Film guide a'ssy
18	450711	Decoration plate: guide roller
19	017335B	Screw
20	049653B	Washer
21	450712	Collar: guide roller
22	450710	Guide roller
23	450028	Roller open cam a'ssy
24	450585	Screw
25	000430B	Screw
26	049514B	Washer
27	450469	Spring: film hold plate
28	450029	Film hold plate a'ssy
29	116048	Cord stopper
30	132025	Lamp
(31)	450483B	One frame lever
(32)	017308B	Screw
(33)	049063B	Nut
(34)	450124	Click pin
(35)	450614	Pin: lamp
(36)	450119	Lamp base plate
(37)	450123	Bush: click pin

INDEX NO.	PART NO.	PART NAME
(38)	450159	Spring: click pin
(39)	087236	Washer
(40)	0500020G	Retaining ring
(41)	450127	Isolation base
(42)	450618	Contact plate
(43)	450619	Spring: contact plate
(44)	450617	Spacer: contact plate
(45)	450128	Screw
(46)	450615	Spring: lamp pin
(47)	450616	Pin holder
(48)	050012G	Pin holder retaining ring
(31)~(48)	450019	Lamp base plate a'ssy
49	049553B	Washer
50	017306B	Screw

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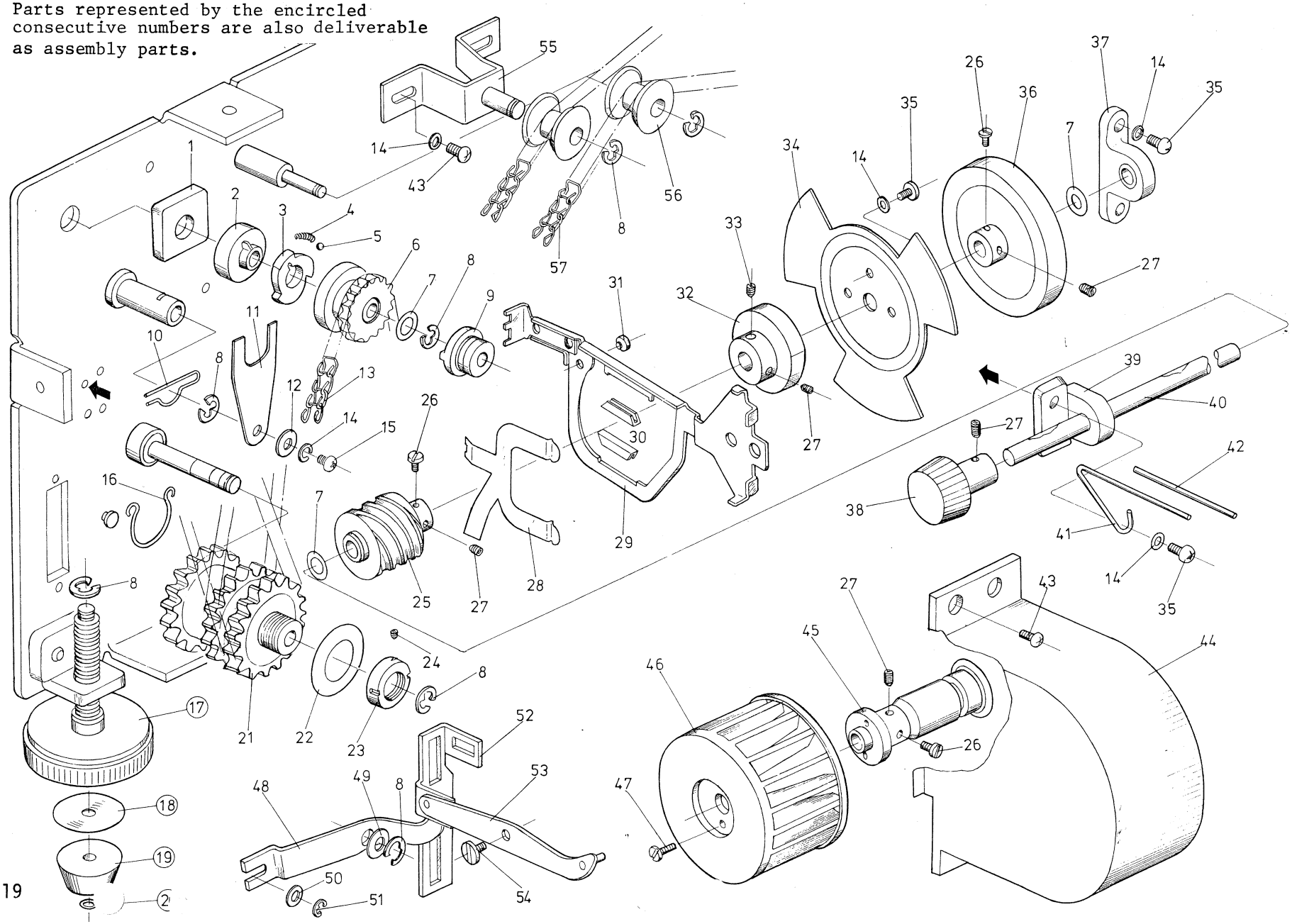
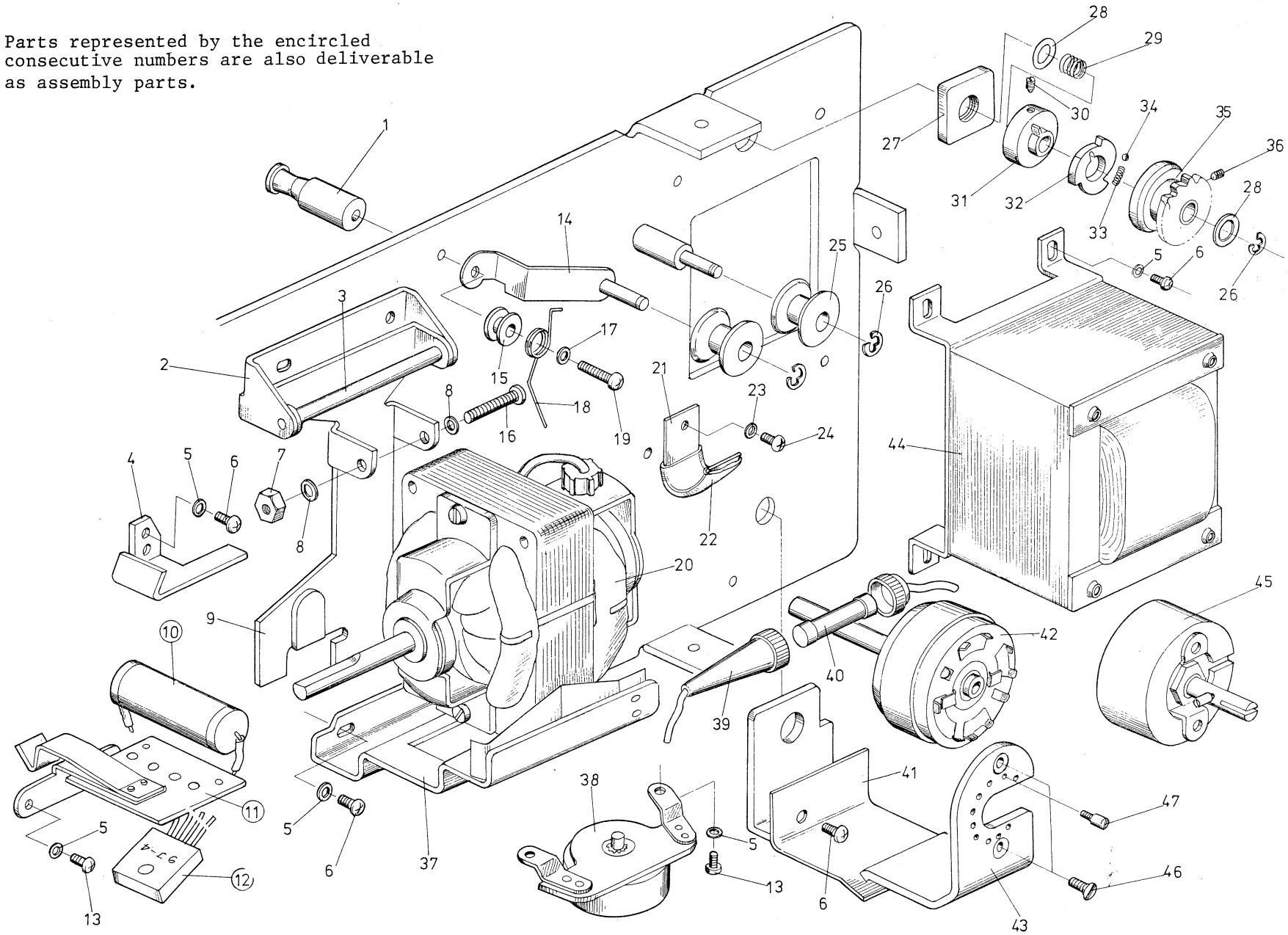


INDEX NO.	PART NO.	PART NAME
1	450708	Nut
2	450409	Triangle guide
3	450603	Triangle frame
4	450604	Spring: triangle frame
5	450605	Steel ball
6	450014	Hook ring gear a'ssy
7	450408	Washer
8	050104G	Retaining ring
9	450431	Clutch
10	450435	Click spring
11	450432	Clutch spring
12	087206	Washer
13	450728	Hook link chain 54
14	049573B	Washer
15	081010	Screw
16	450337	Spring: change lever
(17)	450489	Foot: front
(18)	450491	Washer
(19)	450492	Rubber: front foot
(20)	450493	Washer
(17)~(20)	450050	Front foot a'ssy
21	450010	Helcal gear a'ssy
22	450398	Washer
23	450703	Nut: helcal gear
24	031320B	Screw
25	450394	Worm gear
26	450585	Screw
27	034304B	Screw
28	450318	Spring: claw
29	450314	Claw
30	450317	Shoe
31	450607	Cam spacer
32	450608	Cam
33	083010	Screw
34	450319	Shutter
35	017306B	Screw
36	450108	Rubber wheel
37	450191	Bearing: shutter shaft
38	450107	Knob: shutter shaft

INDEX NO.	PART NO.	PART NAME
39	450005	Bearing: shutter shaft
40	450393	Shutter shaft
41	450772	Chain adjuster
42	116058	Vinyl pipe
43	017304B	Screw
44	450774	Fun case
45	450006	Fun shaft a'ssy
46	450385	Fun
47	000460B	Screw
48	450013	Change lever a'ssy
49	087409	Washer
50	087204	Washer
51	050020G	Retaining ring
52	450329	Slide plate: change lever
53	450012	Shaft change lever a'ssy
54	450328	Screw
55	450077	Chain idler a'ssy
56	450714	Chain idler
57	450727	Hook link chain 133

Parts represented by the encircled consecutive numbers are also deliverable as assembly parts.



INDEX NO.	PART NO.	PART NAME
1	450586	Rewinding guide
2	450380	Motor hinge
3	450381	Shaft: motor hinge
4	450542	Stopper: motor bracket
5	049573	Washer
6	017305B	Screw
7	049064B	Nut
8	049574B	Washer
9	450379	Motor bracket
(10)	165041	Condensor
(11)	450081	Condensor base plate
(12)	142072	Rectifier
(11)~(12)	450080	Condensor base plate a'ssy
13	017306B	Screw
14	450036	Chain lever a'ssy
15	450716	Bush
16	017430B	Screw
17	049653B	Washer
18	450414	Spring
19	017316B	Screw
20	450378	Motor
21	506233	Cord holder
22	116022	Vinyl tube
23	034303A	Washer
24	017304B	Screw
25	450714	Chain aidler
26	050104G	Retaining ring
27	450708	Nut
28	450408	Washer
29	450554	Spring: winding shaft
30	031320B	Screw
31	450409	Triangle guide
32	450603	Triangle frame
33	450604	Spring: triangle frame
34	450605	Steel ball
35	450014	Hook ring gear a'ssy
36	031320B	Screw
37	450078	Motor suporter a'ssy
38	450217	Voltage switch

INDEX NO.	PART NO.	PART NAME
39	450796	Fuse case
40	117004	Fuse
41	450776	Insulatin plate
42	450777	Rotary switch
43	450725	Switch bracket
44	450202	Transformer
45	450214	Speed resistor
46	018305B	Screw
47	450746	Screw (3ø)
	450731	Screw (4ø)
	450747	Screw (6ø)

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RICOH COMPANY, LTD.
No.14-6, 6-chome, Ginza, Chuo-ku, Tokyo, Japan

RICOH OF AMERICA, INC.
Room No.4408 Empire State Buil 350 Fifth Avenue
New York, N. Y. 10001 U.S.A.

RICOH S.A.
Vrachtgebouw P.O. BOX7569 Schiphol-centrum Amsterdam Holland

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