

TW5-898-2-L14-D2T5

INSTRUCTION BOOK / PARTSLIST / SYSTEM SERVICE MANUAL

1- & 2-NEEDLE POST BED DIRECT DRIVE COMPOUND FEED
LOCKSTITCH MACHINE WITH THREAD TRIMMER



TYPICAL

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OPERATION INSTRUCTION

1. Brief introduction

This series of post bed sewing machines feature automatic thread trimmer, automatic backtacking, automatic presser foot lifter, walking foot movement changeover, and stitch length quick change. The said machines are equipped with pneumatic presser foot lifter and backtacking, large dial mounted on machine head for easy setting of walking foot movement and sewing speed. Reverse feeding, auto backtacking and alternate stitch can be easily set. Automatic lubrication system, long durability and smooth running.

Suitable for sewing such as car seats, upholstery, tents, luggage, sports goods, etc

2. Main specifications

Model	GC24677L14D2T5	GC24676L14D2T5
Max speed	2400 s. p. m.	
Max stitch Length	9mm	
Presser height	By hand By knee Auto lifter	≥9mm ≥16mm ≥16mm
Amount of walking foot movement	1~7mm	
Needle	DPX17 19#	
Needle Gauge		6, 8, 10mm

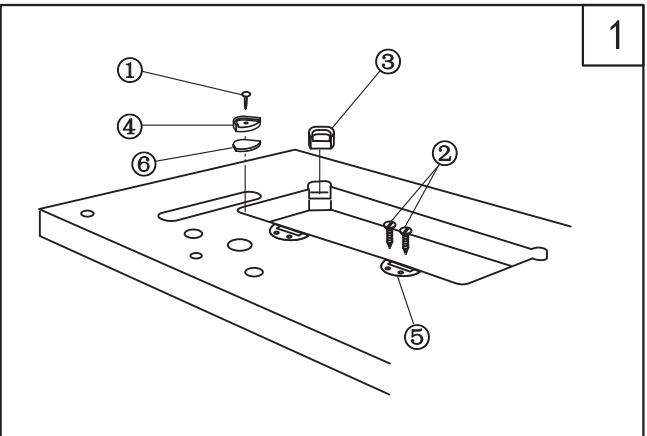
Sewing speed range

Amount of walking foot movement	Stitch length	
	≤6mm	6~9mm
1~4mm	2400 s. p. m.	1500 s. p. m.
5~6mm	2000 s. p. m.	

Note: Sewing speeds should be subject to amounts of walking foot movement shown in the left column of the table.

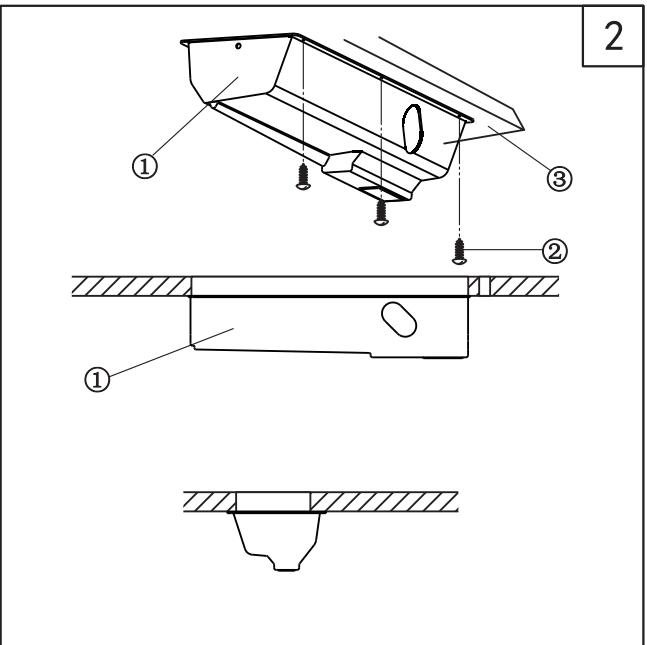
3. Installing hinge and cushion(fig.1)

1. Fix the machine head hinge ⑤ on the table with screw ②.
2. Fix cushion ③.
3. Fix cushion ④ with space ⑥ and nail ①

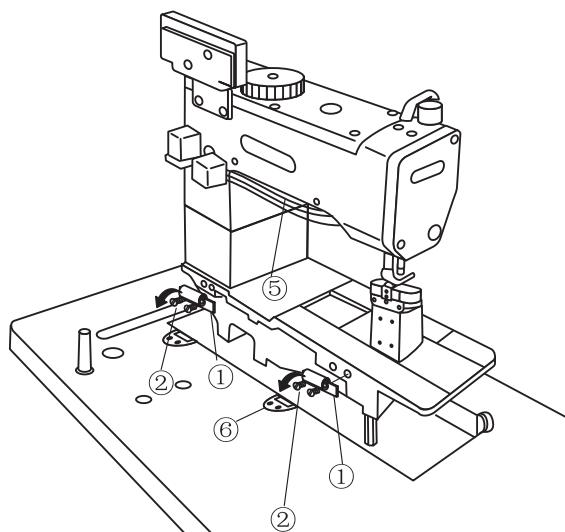


4. Installing the oil pan(fig.2)

Install the oil pan ① to the underside of the table ③ in the place shown in the illustration using the wooden screws ②.



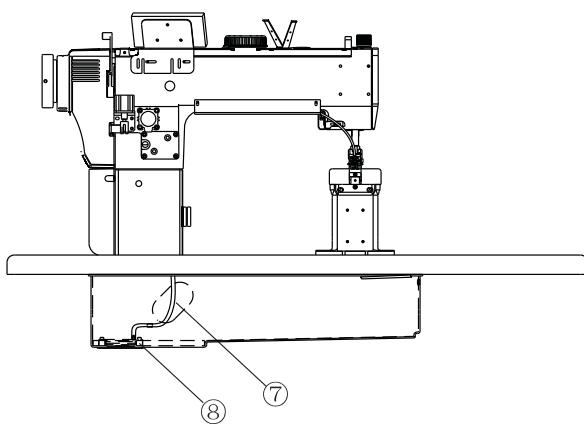
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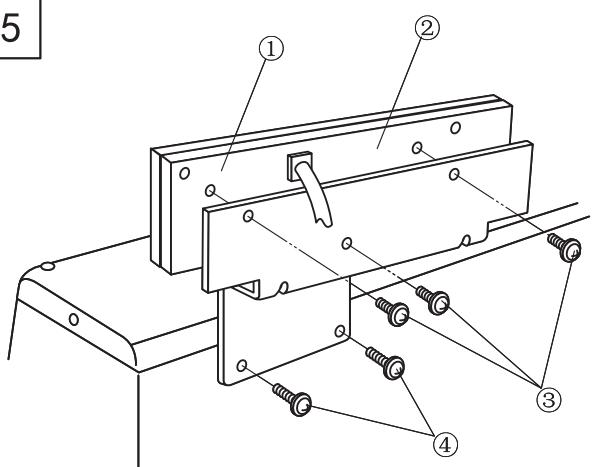
5. Installing the machine head(fig.3)

1. Install the hinge ① on the machine bed with screw ②.
2. Put the hinge ① into another hinge ⑥, then put the machine into the cutout of table.
3. Connect the oil tube ⑦ with nozzle ⑧ of oil pan.

4



5



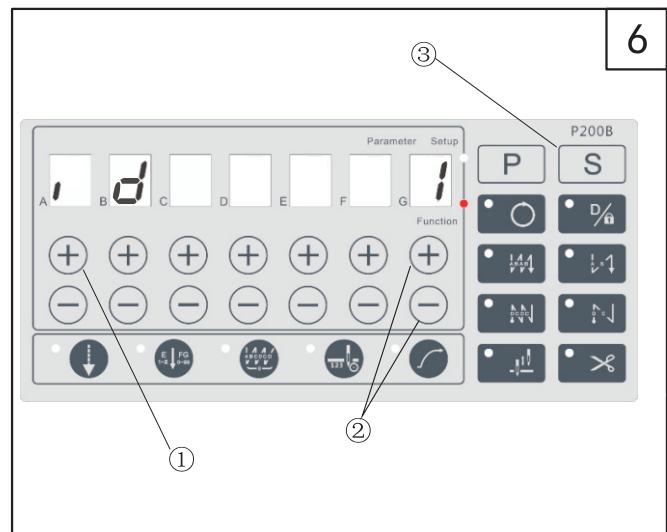
6. Installing the operation panel (fig.5)

1. Install the panel ① on the plate ② with screw ③.
2. Fix the plate ② on the machine back with screw ④.

7. Setting the machine ID (fig 6).

NOTE: 1. When start to use, please set the machine ID first
 2. For control system YSC-8361 only

- 1.Press the key "+" ①, and power on
- 2.Adjust the keys "+/−" ② to number "10", then press key "S" ③ to save
- 3.Restart the system

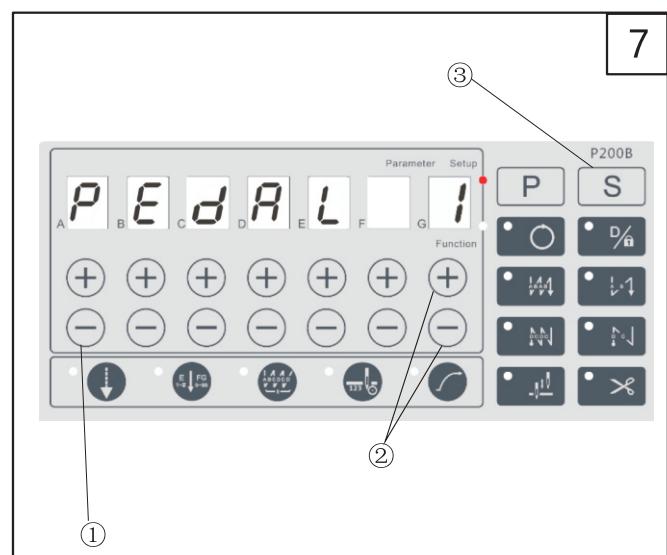


8.Changeover between normal pedal and standing pedal Fig 7.

- 1.Press the key "−" ① and power on
- 2.Adjust the keys "+/−" ② to number "1", then press key "S" ③ to save
- 3.Restart the system

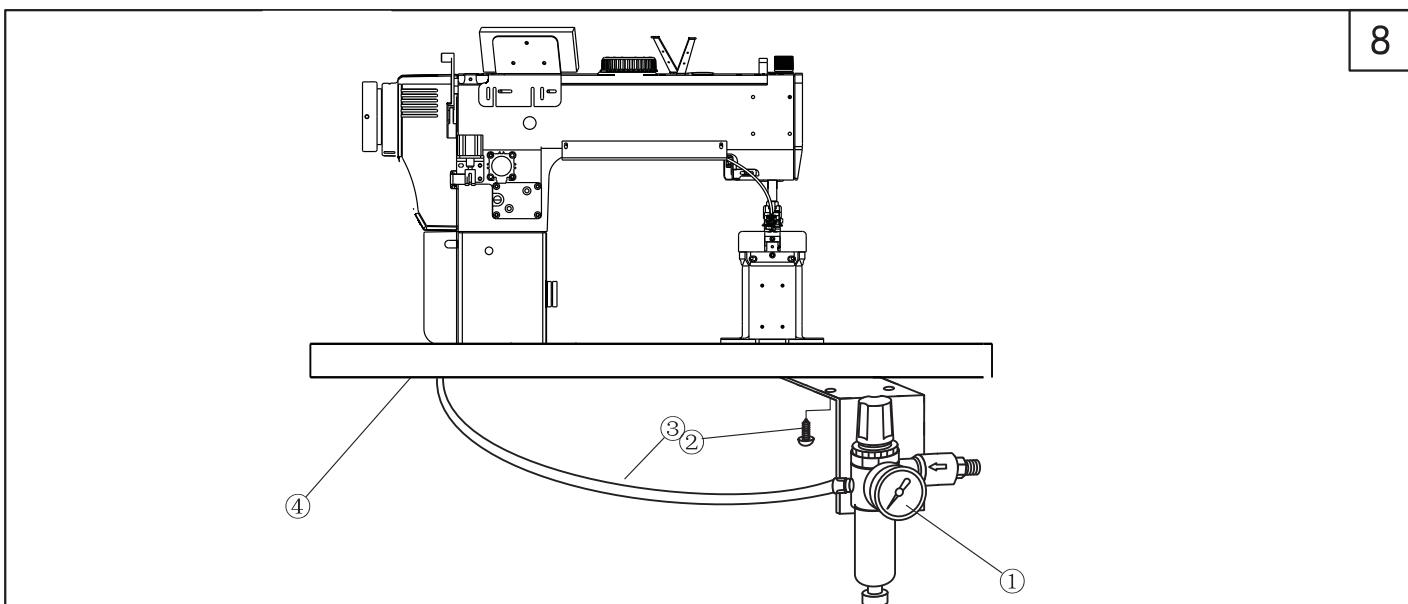
NOTE:

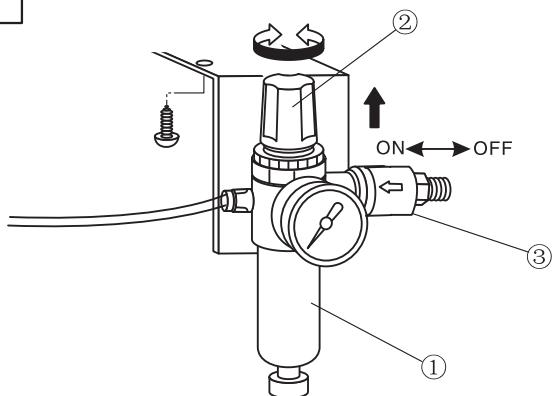
"0" normal pedal
 "1" standing pedal



9. Installing pneumatic mechanisms(fig.8)

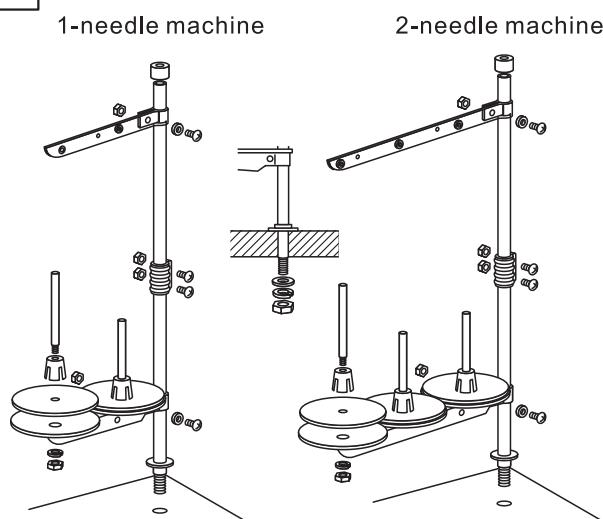
1. Fix pneumatic parts ① under table ④ with screw ②
2. Connect the air tubes ③ as shown in fig



9

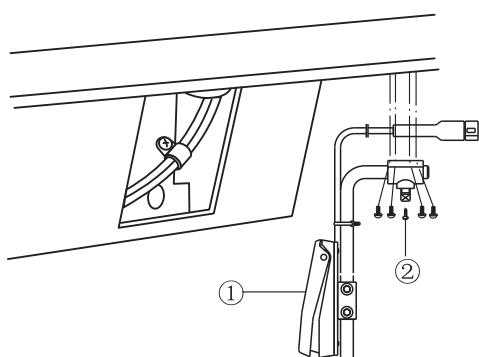
10. Adjusting pneumatic pressure(fig.9)

1. Open the valve ③ shown as the arrow, pull up nut ② on Assy ① to adjust the pressure.
2. Pneumatic pressure of the compressed air should be set to 0.45Mpa before use.
3. Restore nut ② after adjustment

10

11. Installing the thread stand(fig.9)

Install the thread stand on the table shown in the picture.

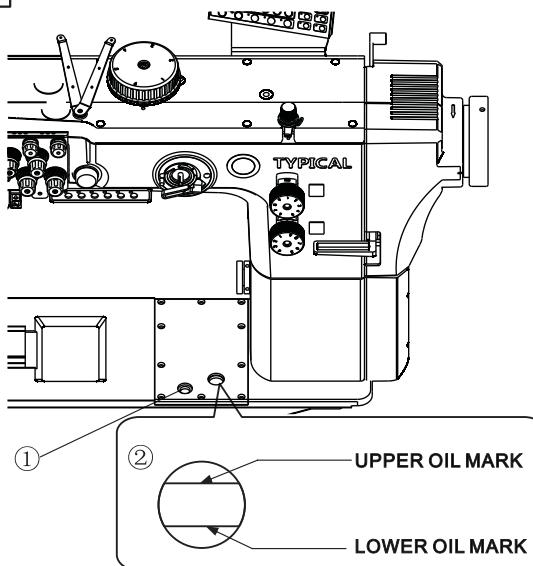
11

12. Installing the knee lifter(fig.11)

1. Install the knee switch ① under the table with screw ②

Note: Make sure to adjust a comfortable position to the operator.

12

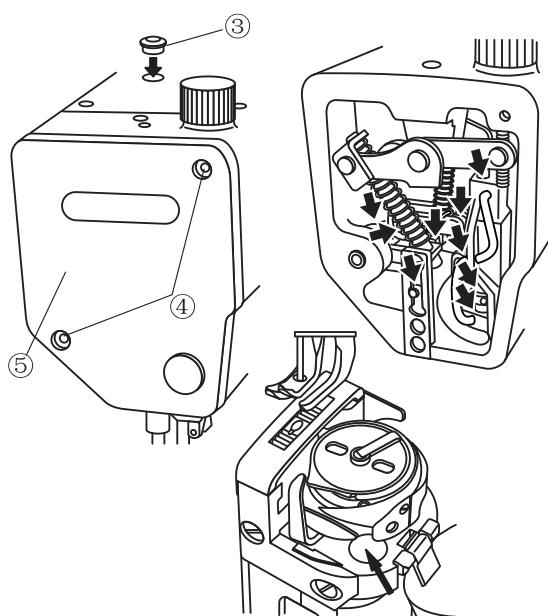


13. Lubrication(fig12, 13)

Lubrication should be made for the initial running or reuse after long periods of idleness.

1. Loosen setscrew ① of the oil tank filler hole.
2. Fill lubricant into the oil tank as per marks ②
3. Fasten screw ① after oiling.

13



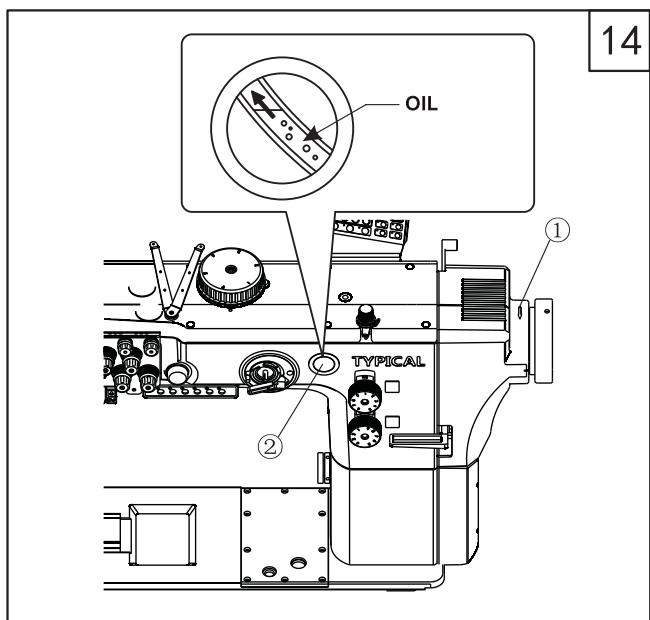
4. Take off rubber cover ③
5. Infuse about 10cc of lubricant into the oil tank
6. Insert the rubber cover
7. Loosen screw ④, remove face plate ⑤. Drip 2 or 3 drops of oil respectively to positions illustrated by arrows.
8. Open the hook cover ⑥ and lubricate shown by arrow in the picture.

Note: If the oil in use is down to the lower mark, replenish oil immediately.

14. Rotating direction of pulley(fig.14)

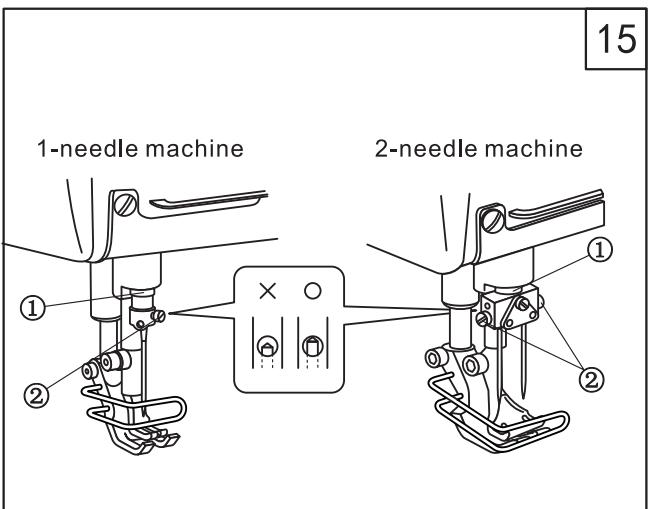
1. Insert the power plug and switch on the machine.
2. Step the foot pedal slightly to confirm the pulley rotates clockwise illustrated by arrow ①.
3. Step the foot pedal slightly to confirm the oil goes up in the oil window ②.

Note: Oil will arrive at positions need lubrication after running for 1 minute.



15. Installing the needle(fig.15)

1. Turn the pulley to rise the needle bar ① to its highest point.
2. Loosen screw ②.
3. Insert the needle fully into the needle bar, making sure that the long groove is facing leftward. Tighten screw ② Securely.

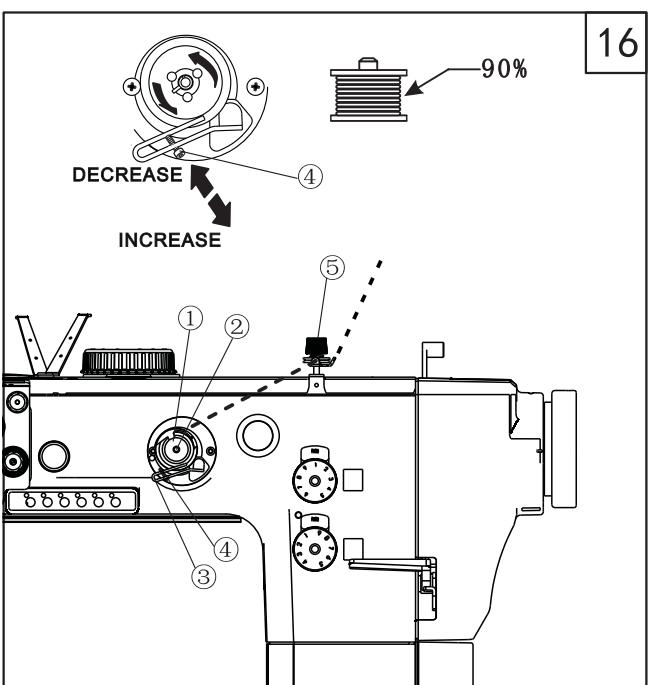


16. Winding the bobbin thread(fig.16)

1. Insert bobbin ① onto the bobbin winder shaft ②
2. Push the bobbin presser ③ toward the bobbin
3. Step the pedal to start winding
4. Bobbin presser ③ will return automatically when winding is completed
5. Remove bobbin ① and cut the thread with knife after winding. And press the thread under the knife to start next winding operation

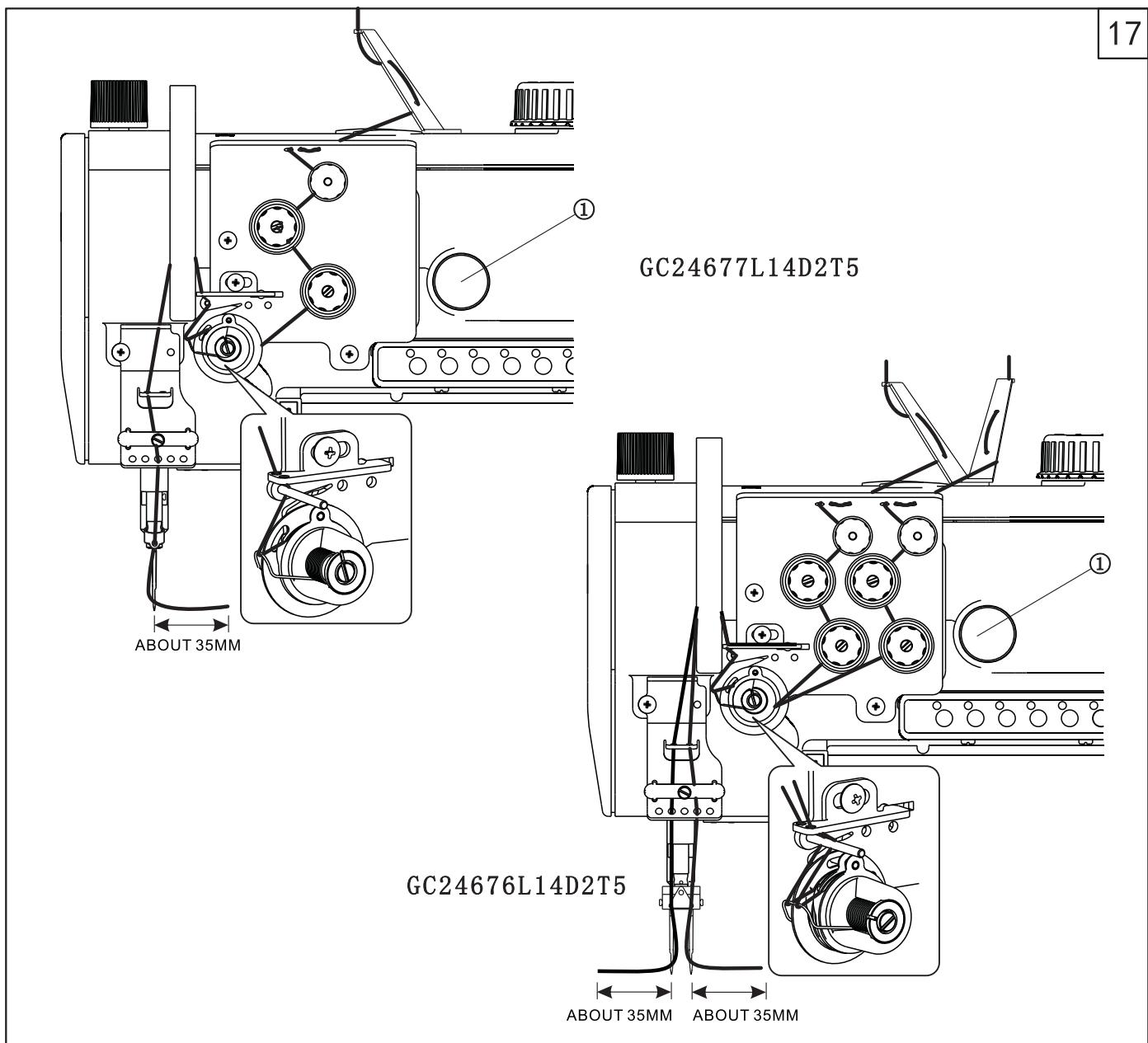
Note:

- 1) Thread amount wound should be a maximum of 90% to the bobbin capacity, which can be adjusted by loosening screw ④ and moving bobbin presser ③ sideways.
- 2) If the thread is wound unevenly, loosen the tension nut ⑤ to adjust

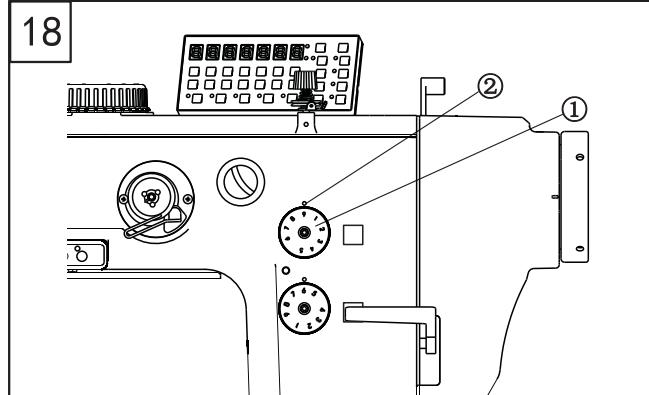


17. Threading the upper thread(fig.17)

Raise the thread take-up lever before threading the upper thread. This will make threading easier and it will prevent thread from coming out at the sewing start. Threading as per illustration in fig.17



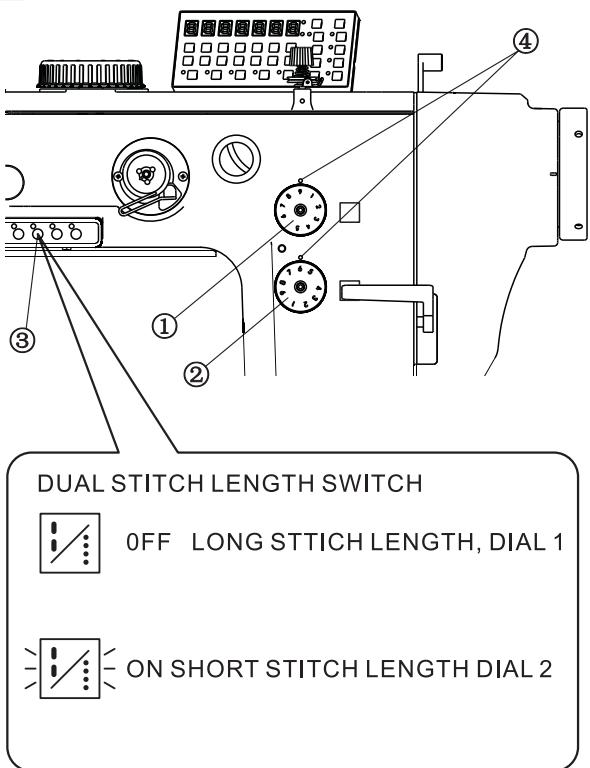
18



18. Adjusting the stitch length(fig.18,19)

1. Adjusting the stitch length (Fig. 18)

Turn the feed adjustment dial ① clockwise or counter clockwise to align the number with the mark ②. The greater the number is, the longer the stitch length get.

19

2. Dual stitch length(Fig.19)

The feed adjustment dial ① and ② can be used to set two different stitch lengths, which can be switched between each other by pressing the stitch length change switch ③ during sewing.

Set the stitch lengths by turning the feed adjustment dials ① and ② clockwise or counterclockwise to align the numbers with the marks ④.

CAUTION: Forcibly turning the dial may cause damage of the sewing machine. Set the upper dial to a higher number than the lower dial.

◆ Adjusting the normal stitch length(when using only one type of stitch length)

Adjust dial ① only.

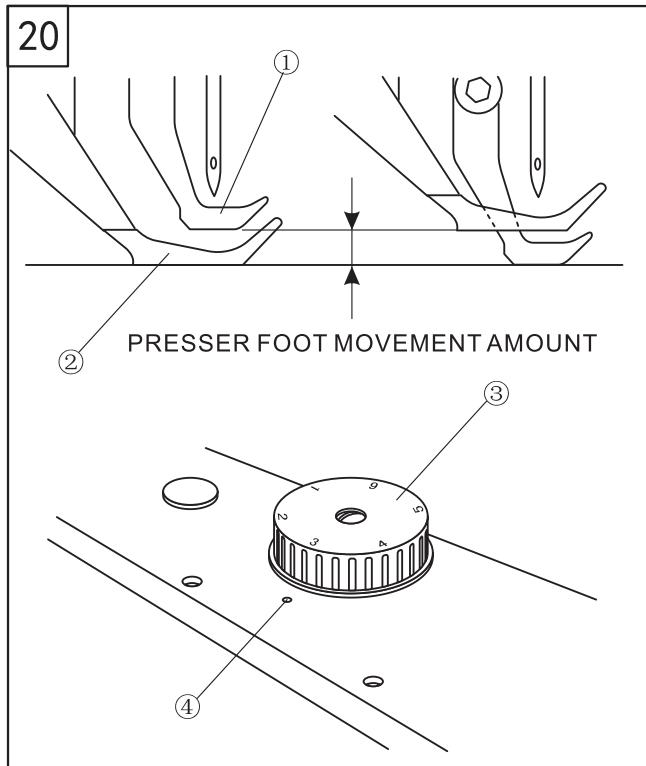
Note: Dial ② is not used at this time, so set it to the smallest number. Also check that the indicator for the stitch length change switch ③ is turned off.

◆ Setting 2 different stitch lengths

- 1) Use dial ① to set the longer stitch length
- 2) Use dial ② to set the shorter stitch length.

Notice: It's not possible to use dial ① to set the shorter stitch and dial ② to set the longer stitch.

- 3) Press switch ③ to switch between 2 different stitches during sewing.

20

19. Alternating presser foot movement amount(fig.20, 21)

1. Manual adjustment(Fig 20)

The alternating movement amount for the inner presser foot ① and the outer presser foot ② can be adjusted within the range of 1–7mm using the alternating presser foot movement dial ③.

Turn the dial ③ clockwise or counterclockwise to align the number(mm) with the mark ④.

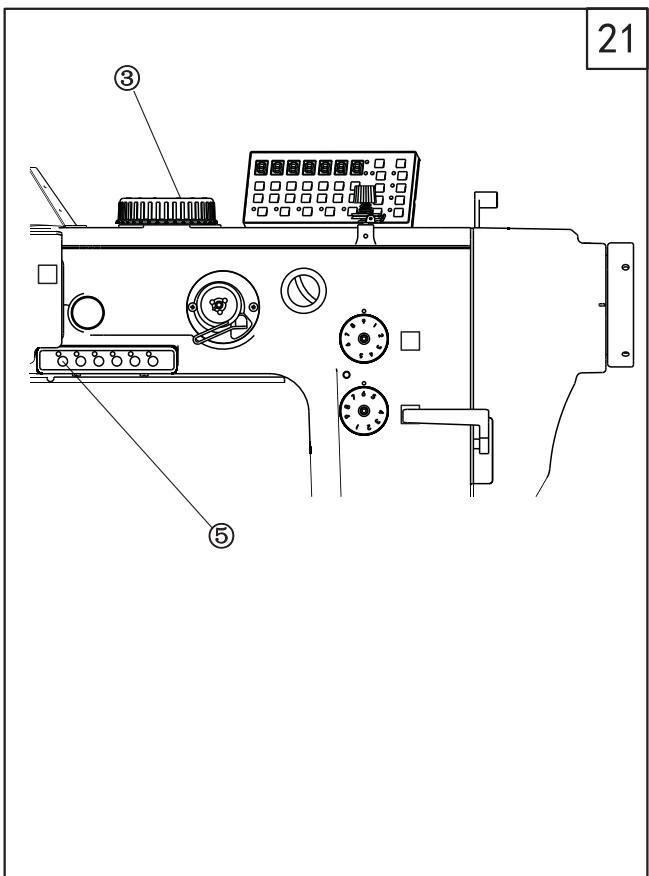
2. Switch adjustment(Fig.21)

Using the alternating presser foot movement change switch ⑤. This switch can be used to change between 2 types of alternating movement: the movement amount set by the alternating presser foot movement dial ③ and the maximum movement amount (7mm).

OFF – The alternating presser foot movement amount equals the amount set by the dial ③.

ON – The alternating presser foot movement amount equals the maximum movement amount (7mm).

Note: The alternating presser movement amount can also be switched by knee switch



20. Using the manual switches(fig.22)

1. Quick reverse switch

Bartacking is carried out when this switch ① is pressed

2. Sewing light switch

3. Alternating presser foot movement change switch
Machine can be switched between 2 different alternating presser foot movement amounts each time ② is pressed

If the indicator is off, the alternating presser foot movement amount equals that set by dial ⑥

If the indicator is on, the alternating presser foot movement amount equals the maximum amount (7mm).

4. Auto backtack select switch

If this switch ④ is pressed when either start backtacking or end backtacking has been set to ON at the operation panel, backtacking is canceled for the first time only.

Furthermore, if this switch ④ is pressed when neither start nor end backtacking has been set, backtacking is carried out for the first time only.

5. Half stitch switch

If this switch is pressed while the sewing machine has been stopped during sewing, the needle can then be moved up and down.(it will not move after thread trimming has been carried out.)

6. Stitch length change switch

Stitch length changes alternately between 2 different stitch lengths set each time switch ⑥ is pressed.

OFF – sewing with the stitch length set by dial ⑪(longer stitch length).

ON – sewing with the stitch length set by dial ⑫(shorter stitch length).

7. Second tension release switch

When cross stitch, turn on the switch, then the second tension ⑬ active

8. Safety switch

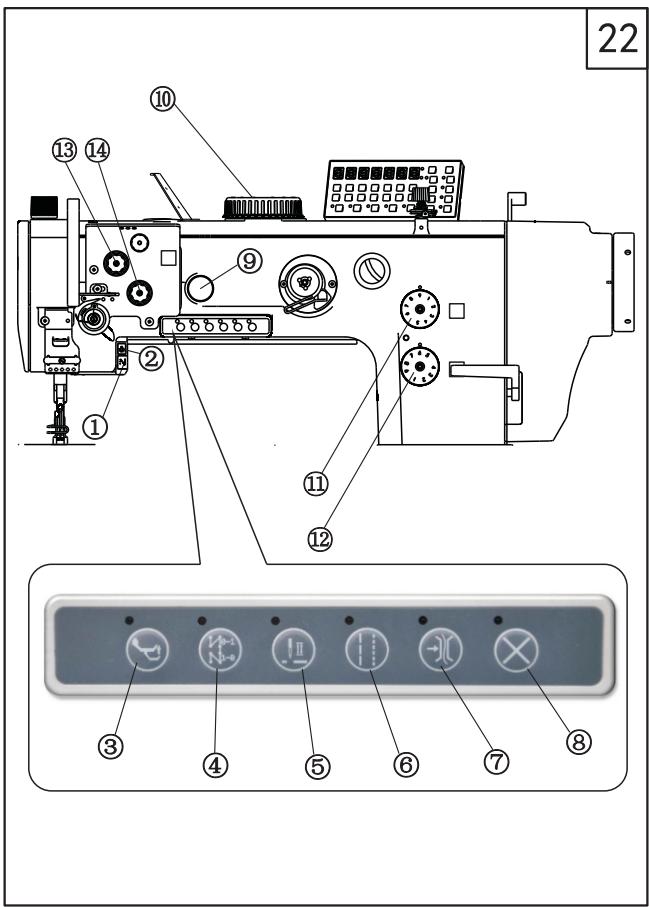
Press the key, the machine will stop for safety

9. Electric handwheel

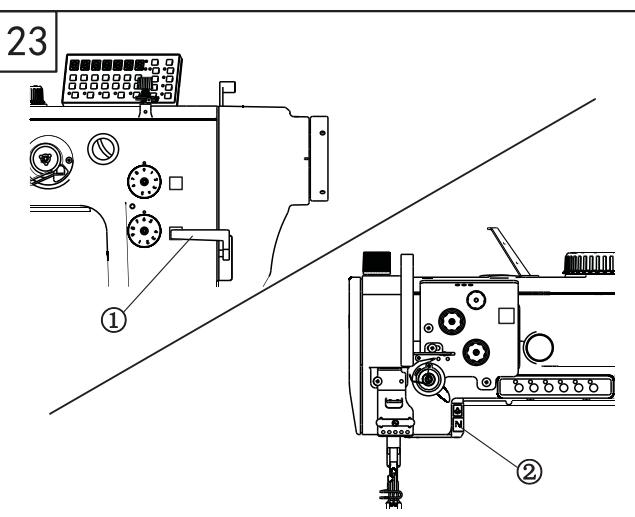
Total two modes optional

(1).Press the handwheel, the machine will be in safety and threading mode, and thread tension ⑬⑭release.

(2).Turn the handwheel, machine will turn slowly.



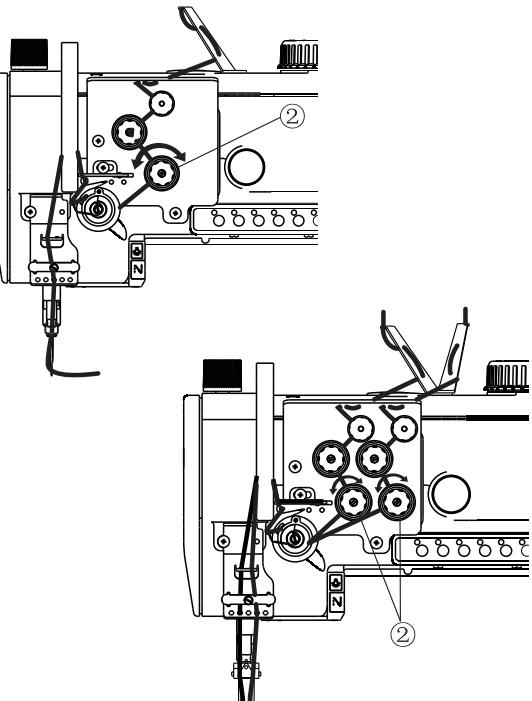
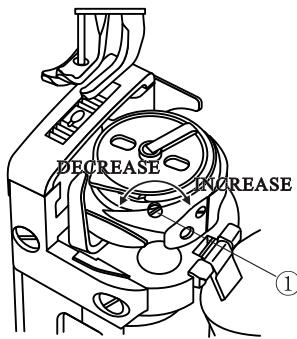
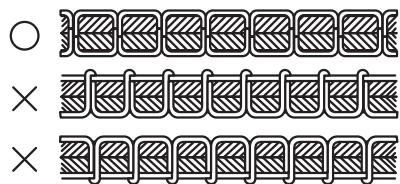
23



21. Backtacking(fig.23)

When the reverse lever ① or the quick reverse switch ② is pressed during sewing, the feed direction will be reversed. When it is released, the feed direction will return to normal.

24



22. Thread tension(fig.24)

1. Lower thread tension

Turn the adjustment screw ① to adjust the lower thread tension.

2. Upper thread tension

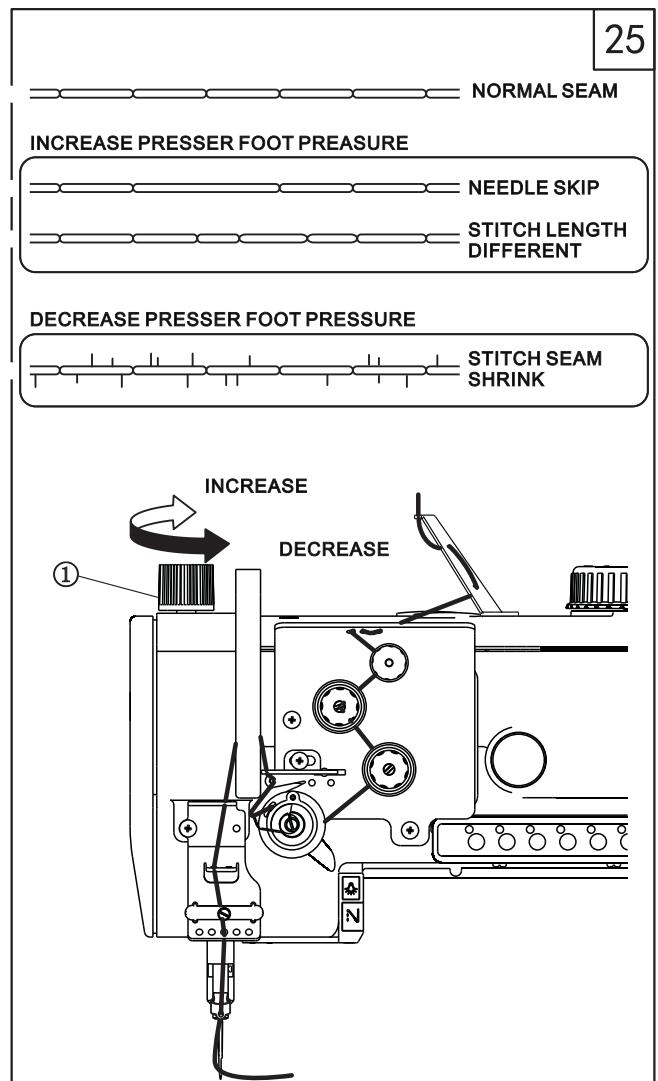
After the lower thread tension has been adjusted, adjust the upper thread tension so that a good, even stitch is obtained.

1) Lower the presser foot.

2) Adjust by turning the thread tension nuts ②

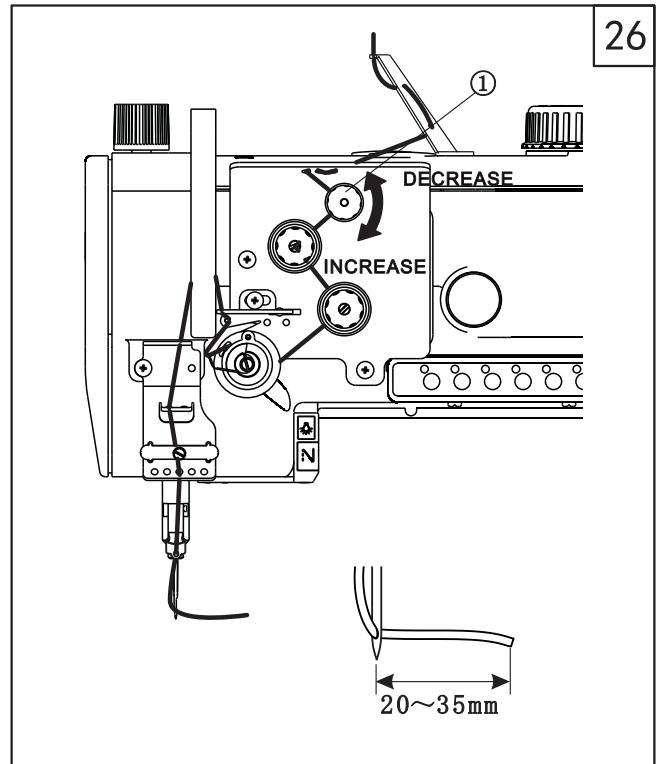
23. Adjusting the presser foot pressure (fig.25)

1. If the presser adjusting dial ① is turned clockwise, the presser foot pressure will become stronger, and if it is turned counterclockwise, the pressure will become weaker.
2. The presser foot pressure should be as weak as possible, but strong enough so that the material does not slip.

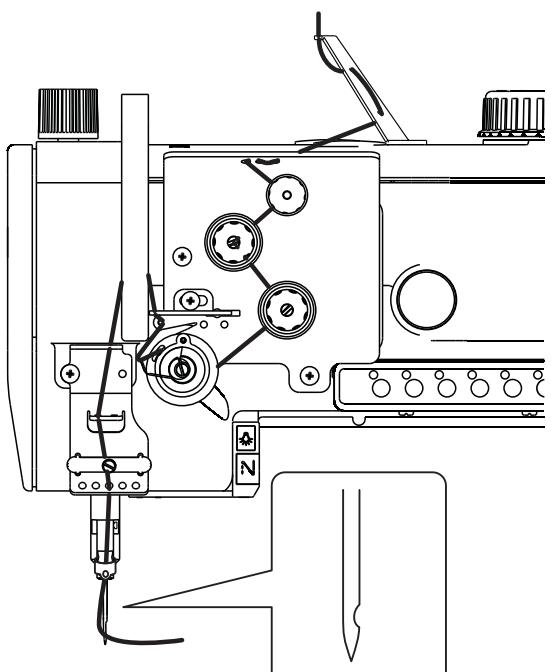


24. Adjusting the trailing length after thread trimming (fig.26)

1. Adjust by turning the pretension ①.
2. The standard trailing length for the upper thread is 20–35 mm.
3. If the tension of the pretension ① is increased, the lengths of the threads trailing from the needle tips will be reduced. If the tension is reduced, the lengths will be increased.



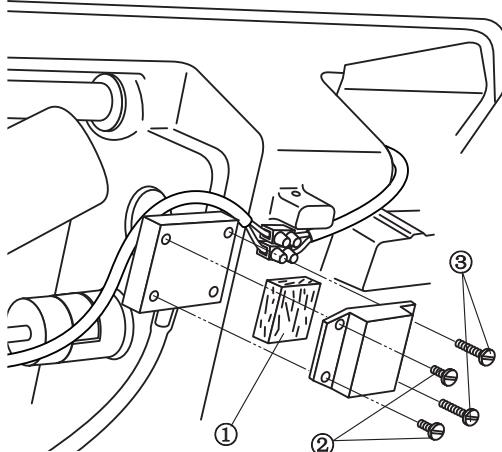
27



25. Confirmation(fig.27)

- 1.confirm if the needle thread is threading right or not
- 2.confirm the needle point worn or not
- 3.try sewing

28

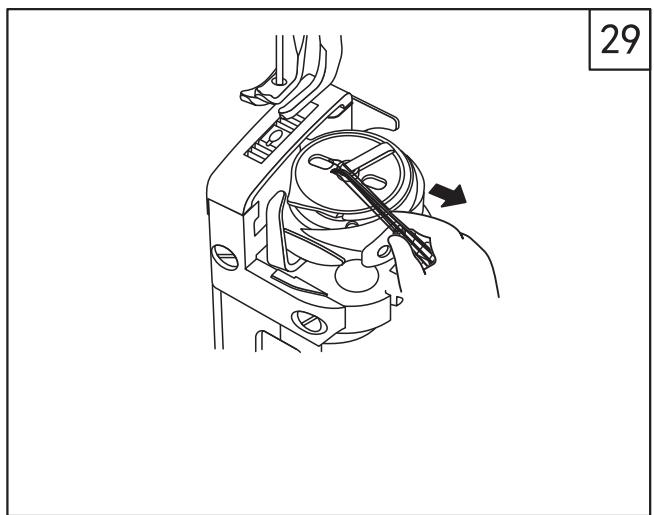


26. Cleaning the oil filter(fig.28)

If the filter ① is dirty, or if the amount of oil consumption increases dramatically, remove 2 screws ② and 2 screws ③, and then remove the filter ①. Clean or replace the filter ① as required. Fasten screws after cleaning.

27. Clean the hook (fig.29)

Clean the hook as fig. 29 shown



29

28. Adjusting the thread tension spring (fig.30)

1. Thread tension spring position

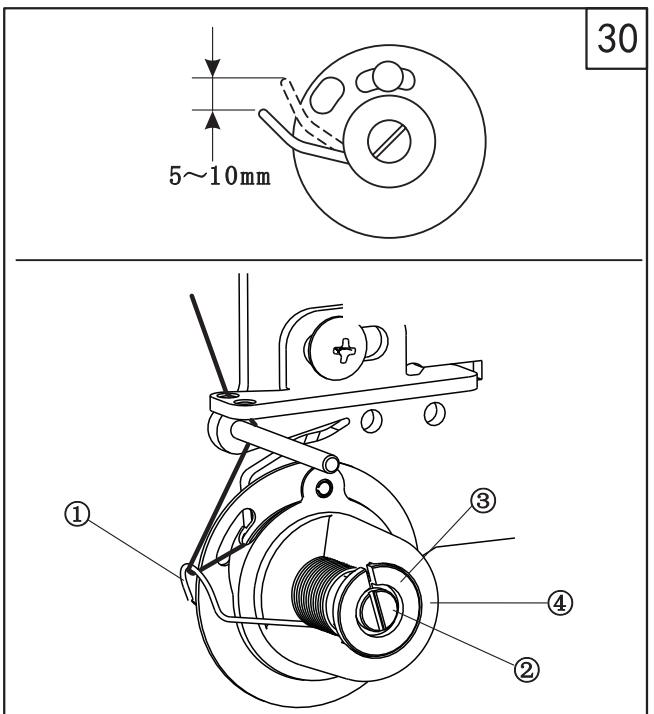
The standard operation range for the thread tension spring ① is 5–10 mm.

- Loosen the screw ② and then turn the stopper ③ to adjust the operating range.
- Tighten the screw ②

2. Thread tension spring tension

The standard tension for the thread tension spring ① is 0.4–0.8N.

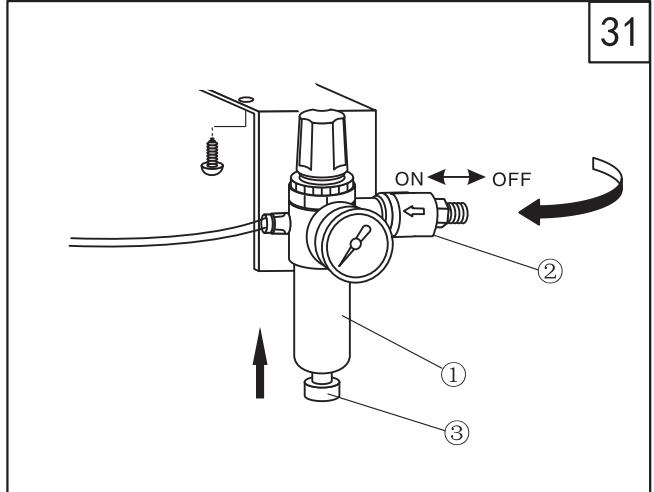
- Loosen the nut ④
- Loosen the screw ⑤, and then turn the tension adjusting stud ⑥ to adjust the tension.
- Tighten the screw ⑤, and then tighten the nut ④.



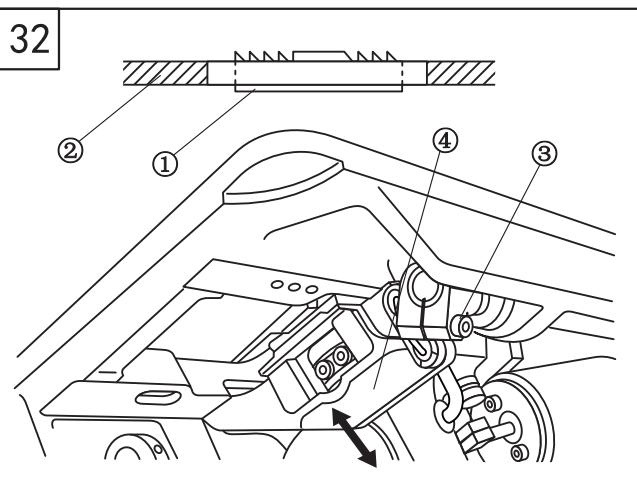
30

29. Drain the water in the filter (fig.31)

Open the valve ②, and push the switch ③ shown as the arrow, then drain the water in the filter.



31

32

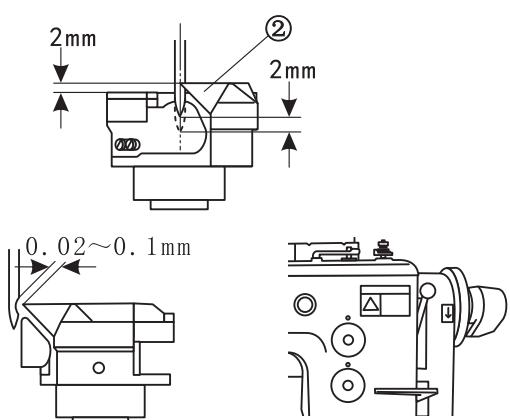
30. Adjusting the feed dog height(fig.32)

The standard height when the feed dog (1) is at its highest point above the needle plate (2) is 1.2 mm.

1. Turn the machine handwheel to set the feed dog (1) to its highest point.

2. Loosen the bolt (3), and then move the feed bracket (4) up or down to adjust the height of the feed dog (1).

3. Tighten the bolt (3).

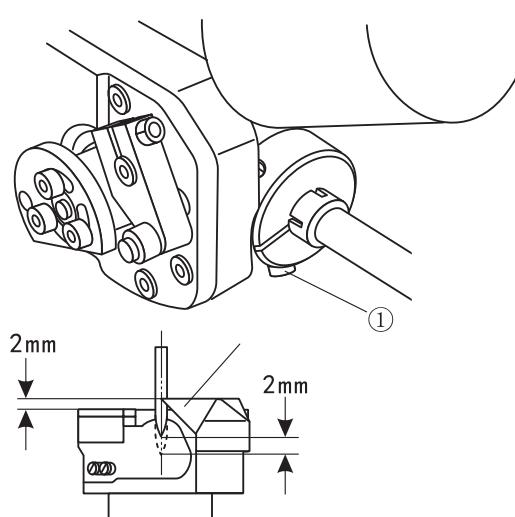
33

31. Needle and rotary hook timing(fig.33, 34)

1. Set the feed adjustment dials:

1–Needle: Max. stitch length.

2–Needle: to set left hook, set the stitch length zero, to set the right hook, set the stitch length 5.5mm

34

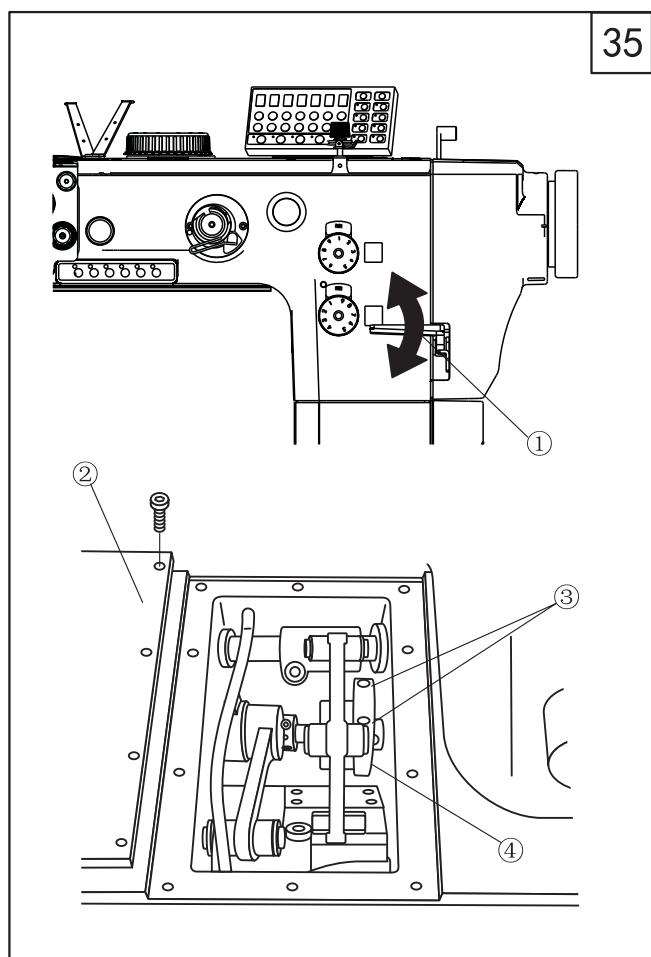
2. Loosen the screw (1), turn the handwheel to lift the needle from lowest position 2mm, then turn the hook to make the hook tip point to the needle central., the clearance between needle and hook point is 0.02–0.1mm, tighten the screw (1)

32. Adjusting the needle and feed mechanism timing (fig.35, 36)

1. Horizontal feed direction

Set the feed adjustment dials to the maximum. Then turn the machine pulley until "B" is visible in the belt cover slot. Then adjust so that the needle and the feed dog do not move even when the reverse lever ① is moved up and down at this time.

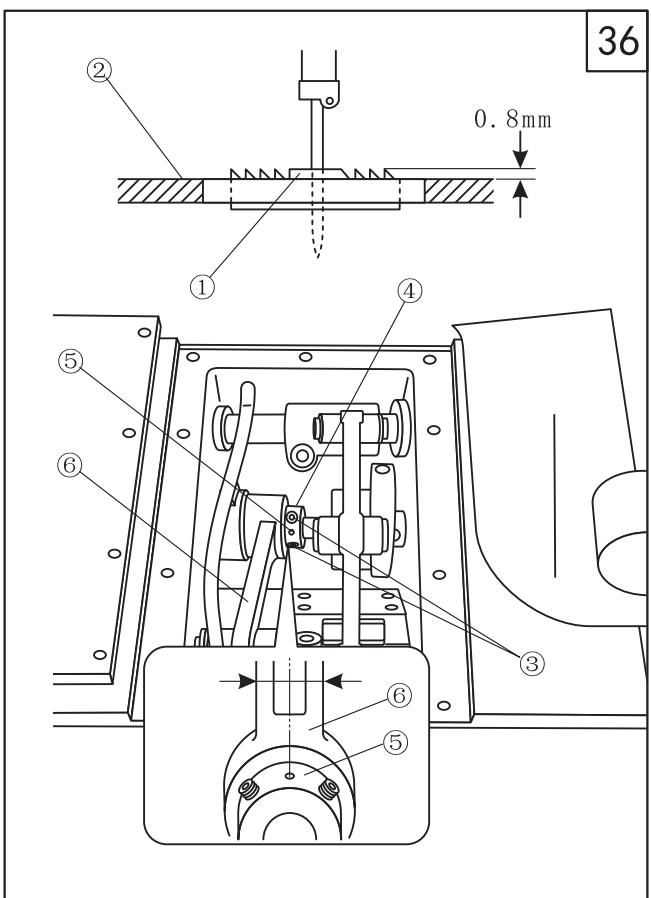
- Remove the bed upper cover ②.
- Set the feed adjustment dial to the maximum settings.
- Loosen the two set screws ③.
- Turn the machine pulley until "B" is visible in the belt cover slot.
- Turn the lower feed cam until the set screw ④ nearest to you is provisionally facing straight up.
- Turn the lower feed cam ④ gradually until it is at the position where the needle and the feed dog do not move even when the reverse lever ① is moved up and down.
- Tighten the two set screws ③.



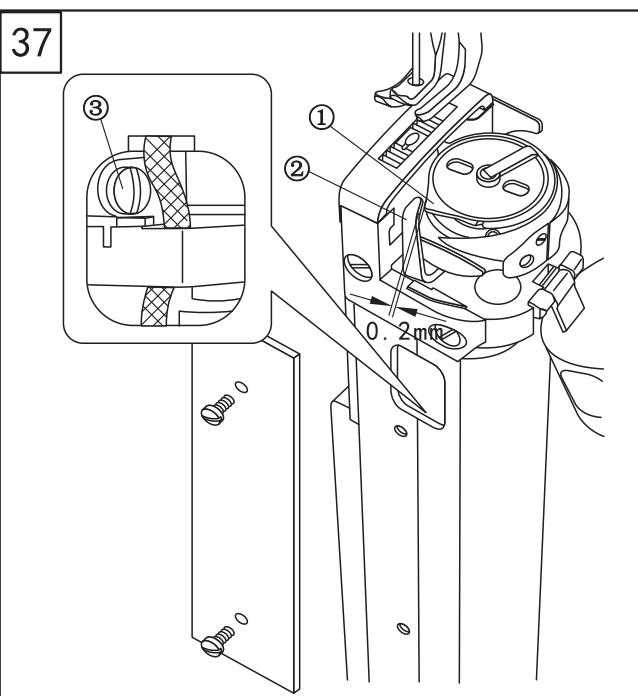
2. Vertical feed direction

Set the feed adjustment dials to the minimum. Then adjust as follows so that the feed dog ① is at its highest position (0.5 mm above the top of the needle plate ②) when the needle bar is at its lowest position.

- Loosen the two set screws ③.
- Turn the machine pulley to set the needle bar to its lowest position.
- Turn feed cam ④ to align the point ⑤ of feed cam ④ with the center line of feed rod ⑥.
- Tighten the set screws ③.



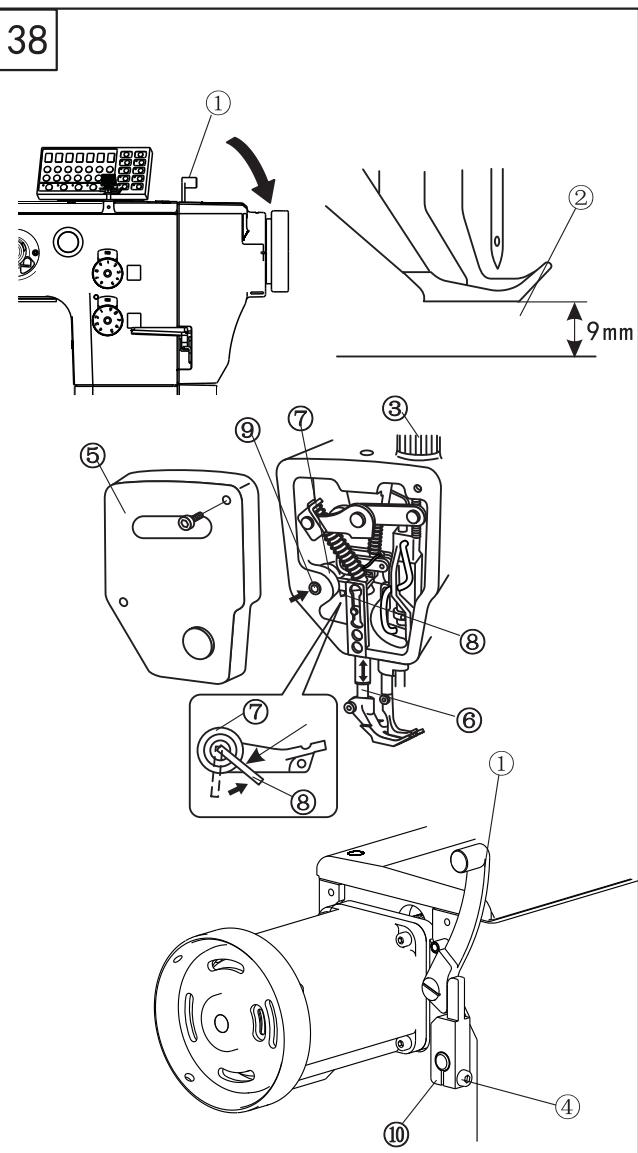
37



33. Adjusting the opener (fig.37)

The min. clearance between opener and hook is 0.2mm, loosen the screw ③, turn the opener ② to make the clearance between hook ① is 0.2mm, finally tighten the screw ③

38



34. Adjusting the presser foot height (fig.38)

The standard height of the outer presser foot ② is 9 mm when it is raised by the presser lifter bar ①.

1. Remove the belt guards.
2. Loosen the presser adjusting dial ③, to release the presser foot pressure.
3. Raise the presser lifter bar ① and then loosen the screw ④.
4. Remove the face plate ⑤.
5. Move the outer presser bar ⑥ up or down to adjust so that the height of the outer presser foot ② is 9 mm.
6. While the stopper pin ⑧ is touching against the notch C in the presser foot lifter connection ⑦ and while pushing the presser lifter shaft ⑨ so that there is no play in the thrust direction, tighten the screw ④.
- Tighten the screw ④ while presser bar lifter cam ⑩ is meshed with presser bar lifter cam ⑪ as shown in the illustration.
7. Turn the presser adjusting dial ③ to adjust the presser foot pressure.
8. Install the belt covers.

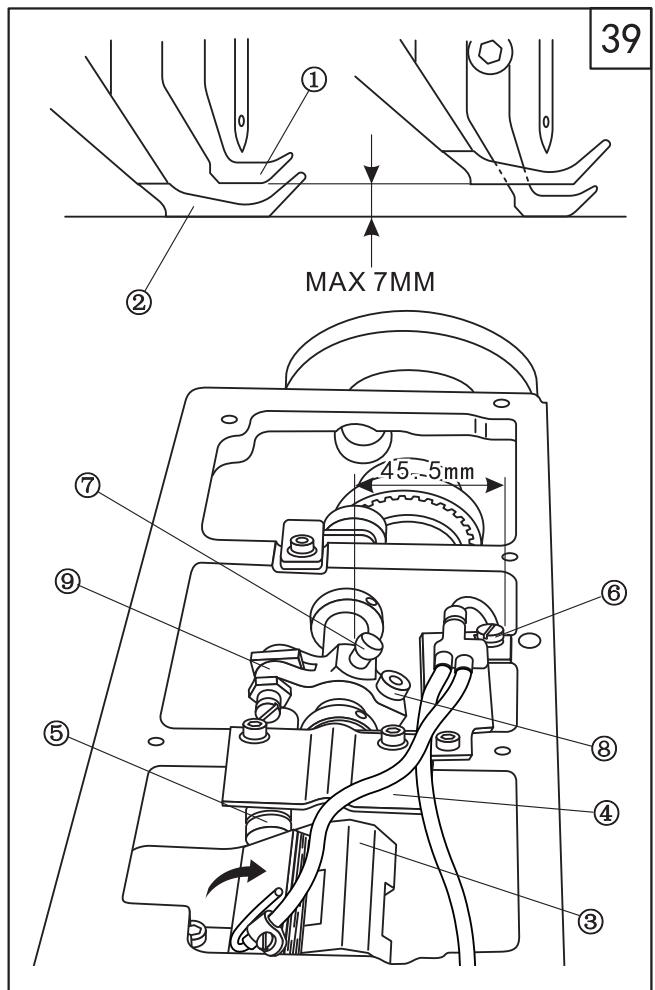
35 Adjusting the alternating presser foot movement amount(fig.39, 40, 41)

1. Maximum alternating presser foot movement amount

Carry out the following adjustment to set the maximum alternating movement amounts for the inner presser foot ① and outer presser foot ② to the maximum of 7mm.

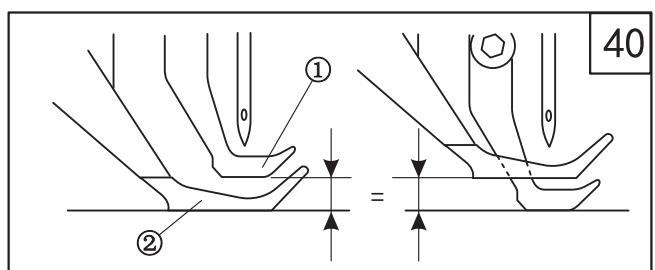
- Remove the upper plate.
- Lift up adjusting bracket ③ so that adjusting bracket collar ⑤ touches the stopper support plate ④.
- Loosen the bolt ⑧ and turn connecting lever ⑨ to adjust so that the distance from the outer edge of the screw ⑥ to the outer edge of pin ⑦ is 45.5 mm at this time. Then tighten the bolt ⑧.

When installing the upper plate, set the alternating presser foot movement dial to the "1" Position.



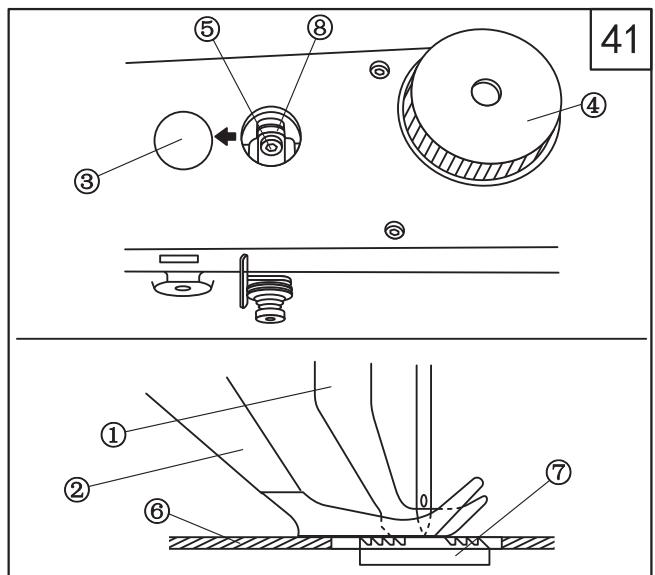
2. Inner presser foot and outer presser foot movement amounts

Carry out the following adjustment to make the movement amounts for the inner presser foot ① and the outer presser foot ② equal when the presser feet are lowered and the machine pulley is turned.

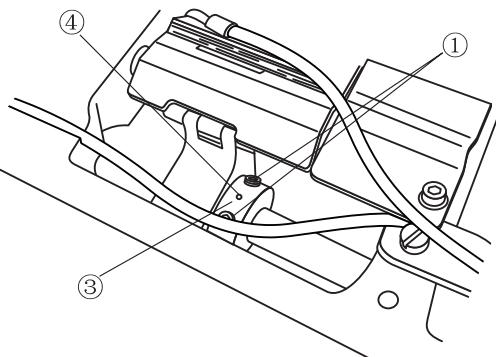


3. Adjustment

- First, carry out the "feed dog height", "needle bar height" and "needle and feed mechanism timing" adjustment.
- Set the feed adjustment dials to the maximum.
- Remove the rubber cap ③.
- Turn the alternating presser foot movement dial ④ to the "3" position.
- Loosen the screw ⑤.
- Turn the machine pulley toward you to align the tip of the needle and the top of the feed dog ⑦ with the top of the needle plate ⑥.
- Move the connecting lever ⑧ to adjust so that both the inner presser foot ① and outer presser foot ② are in contact with the top of the needle plate ⑥ at this time. Then tighten the screw ⑤.



42

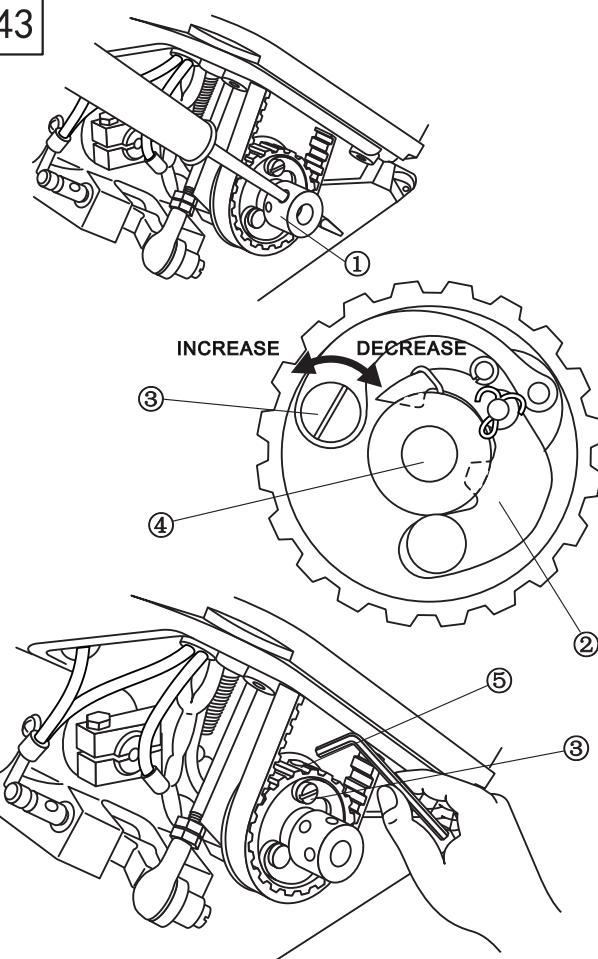


36. Adjusting the presser foot timing (fig.42)

When the presser feet are lowered and the machine pulley is turned toward you, the inner presser foot should touch the feed dog before the needle arrives at the feed dog. Then when the needle lifts up, the tip of the needle should move away from the feed dog before the inner presser foot moves away.

1. Remove the upper cover.
2. Loosen the two screws ①.
3. Turn the machine pulley until "C" is visible in the slot of the belt cover ② (highest take-up lever position).
4. Turn inner presser cam UD ③ to adjust so that the point ④ of inner presser cam UD ③ is facing straight up.
5. Tighten the screws ①.

43



37. Safety equipment (fig.43)

If the thread becomes tangled up in the rotary hook during sewing, the lower belt pulley safety equipment will operate to protect parts such as the rotary hook and the timing belt from damage. The lower shaft will stop rotating, and only the lower belt pulley will rotate in idleness.

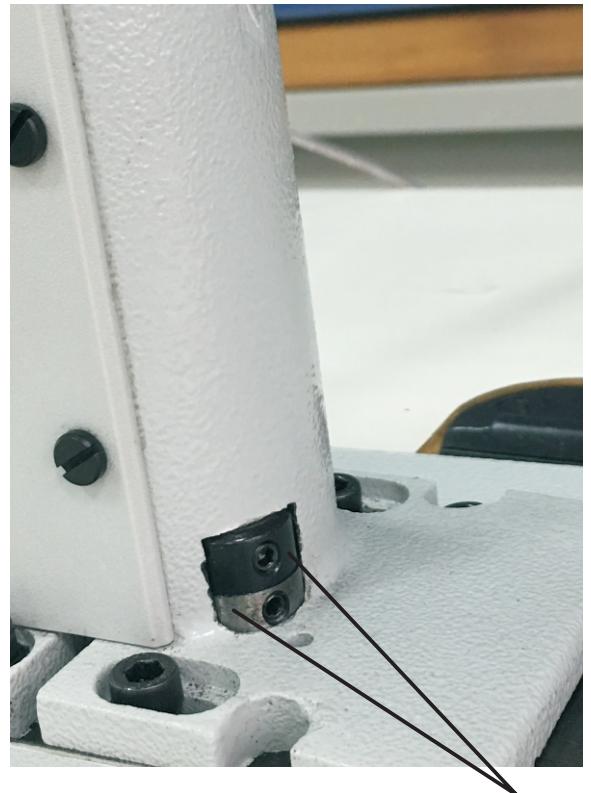
1. Resetting the safety equipment
 - a. Remove the thread which has become tangled up in the rotary hook.
 - Do not use a sharp-tipped instrument to do this, otherwise the rotary hook may become damaged.
 - b. Insert a screwdriver into the hole in the lower belt shaft ①, hold the screwdriver so that it does not turn, and then turn the machine pulley in reverse (clockwise) by hand.
 - c. Turn the machine pulley again but harder. The safety equipment will then be reset.
(Check that the lock lever ② is fitting securely into the groove of the lower belt shaft ①.)

2. Safety equipment engagement strength

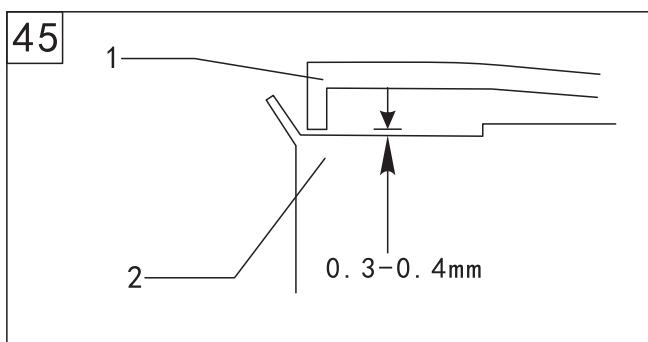
The engagement strength of the safety equipment is weakest when the arrow on the lock lever spring shaft ③ is pointing toward the center of the shaft ④, and strongest when it is pointing toward the outside.

 - a. Turn the machine pulley to the position where an Allen key can be inserted into the set screw ⑤.
 - b. Loosen the set screw ⑤, and then turn the lock lever spring shaft ③ to adjust.
 - c. After adjusting, securely tighten the set screw ⑤.

38. Adjusting the position of movable knife (fig.44. 45)



(44)



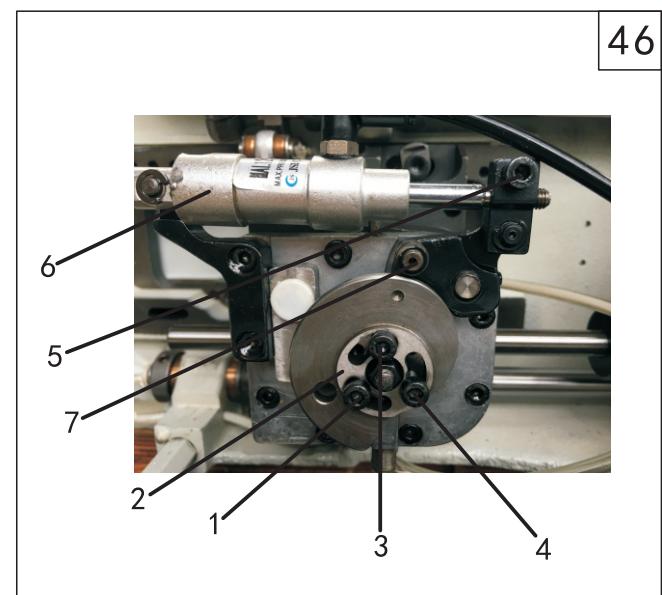
Requirements: the clearance between the lower surface of movable knife ① and hook lower level ② is 0.3–0.4mm shown in Fig 45.

Adjust according to Fig 44:

1. Loosen the screw ①;
2. Adjust the movable knife ② to the required clearance;
3. Tighten the screw ①

39. Adjusting the trimming time(fig.46)

- 1.Trimming is up to the position of cam, when the needle bar is at its highest position, roller 7 should be touched with the highest point of cam ②
- 2.When sewing, the roller cannot be touched with the cam, the clearance should be 0.1mm
- 3.Adjustment: loosen the screw ⑤, adjust the clearance between roller and cam, then adjust the cylinder shaft ⑥, finally tighten the screw ⑤
- 4.Adjustment of cam,
 - 1)Loosen the cam screw 1, 3, 4
 - 2)Turn the cam to adjust the clearance
 - 3)Tighten the screw 1, 3, 4.



40. Adjusting the fixed knife and thread clamp spring(fig.47)

Thread clamp spring ⑤ can hold the bobbin thread after trimming to prevent needle skip.

Fixed knife ④ should be parallel installed with movable knife ⑥.

1.Parallel position adjustment

Loosen the screw ③, adjust the parallel between movable knife ⑥ and fixed knife ④, and adjust screw ②, finally tighten the screw ③

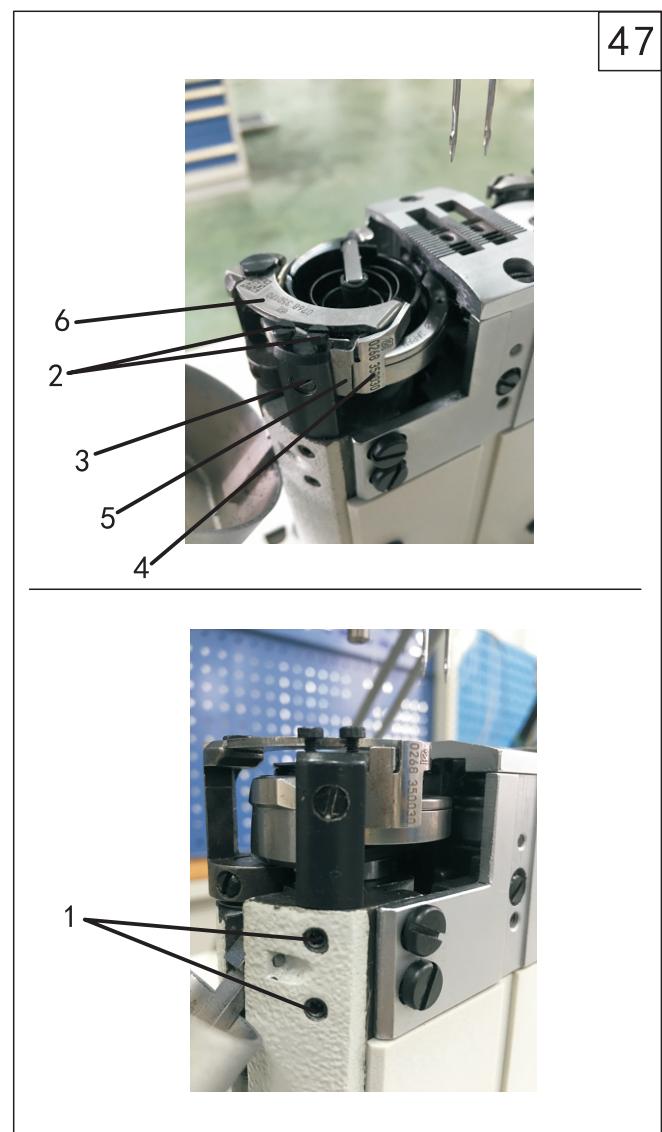
2.Adjust the trimming pressure

To make sure that the pressure is lowest when trimming smoothly... usually the overlap between movable knife and fixed knife should be 1/3.

Loosen the screw ① to adjust the fixed knife base.

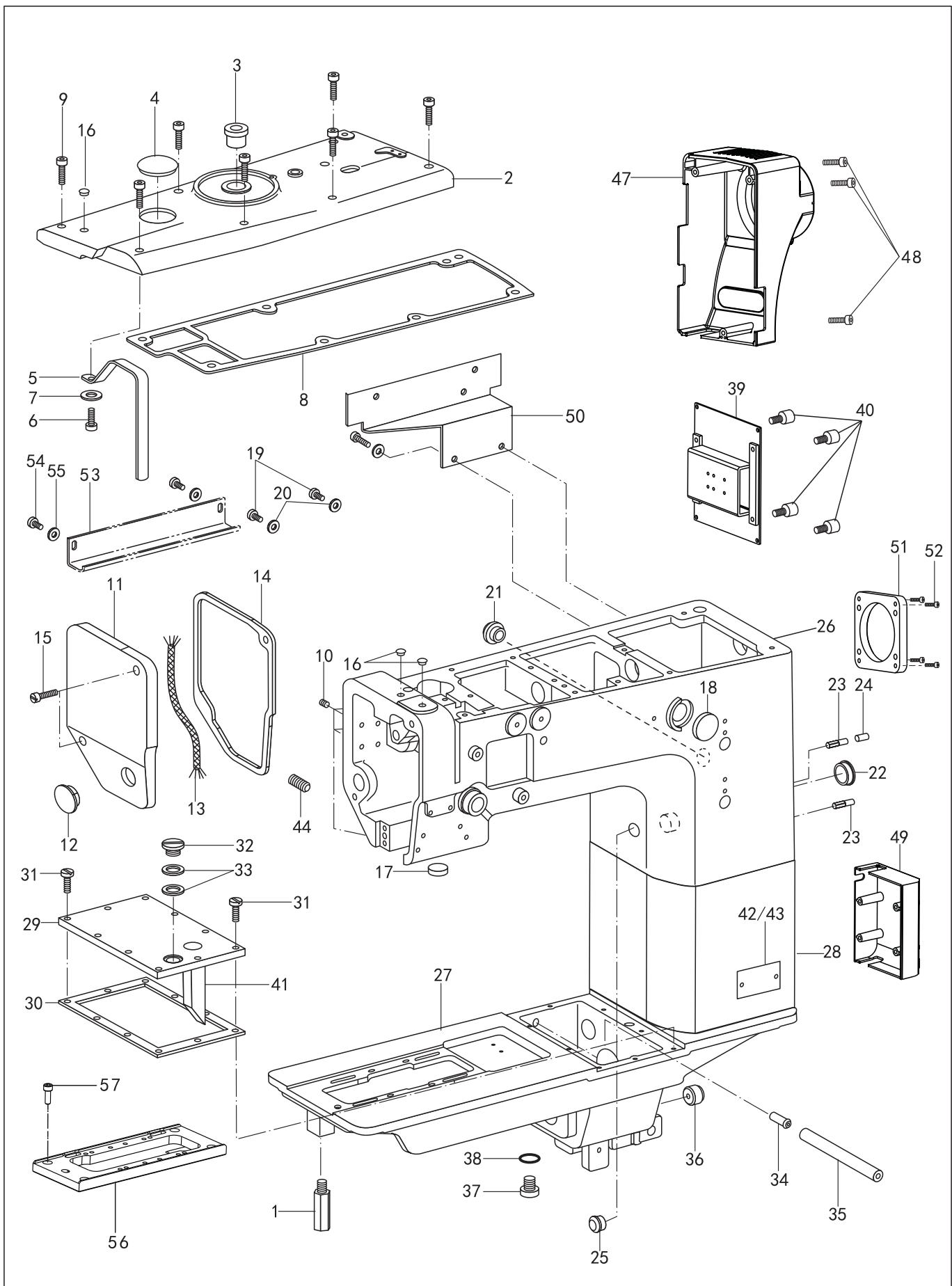
3.Adjust the clamp spring

Slightly blend the spring to adjust the thread clamp spring.



PARTS MANUAL

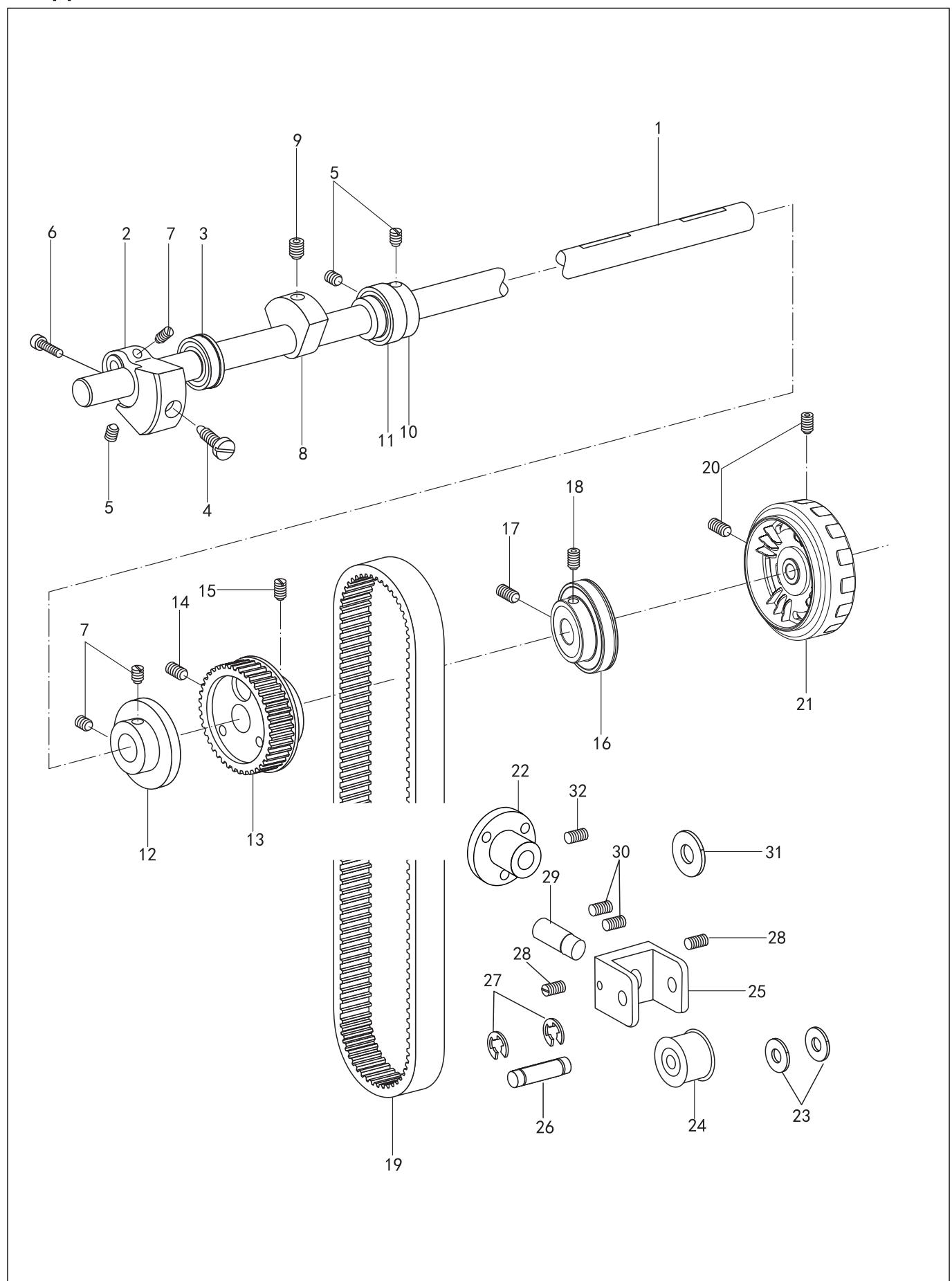
1. Machine body



1. Machine body

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	994387	Support bar	1	1	
2	394WF1-003	Top cover	1	1	
3	93WF1-001	Dial bushing	1	1	
4	93WF1-002	Rubber cap, 32.8	1	1	
5	994232	Thread take-up lever cover	1	1	RAL7015
6	93WF1-024	Bolt	1	1	
7		Washer	1	1	
8	304WF1-002	Sheet packing	1	1	GB/T 97.1 4
9	93WF1-026	Bolt	7	7	
10	93WF1-027	Set screw	5	5	
11	994005	Face plate	1	1	
12	93WF1-004	Rubber cap, 20.5	1	1	
13	994007	Oil wick	1	1	L=130
14	93WF1-005	Packing	1	1	
15	93WF1-029	Bolt	2	2	
16	93WF1-006	Rubber cap, 9.5	3	3	
17	93WF1-007	Rubber cap	1	1	
18	93WF1-008	Oil window	1	1	
19	13WF2-008	Screw	2	2	
20	93WF1-009	Washer	2	2	
21	93WF1-048	Rubber cap	1	1	
22	93WF1-010	Bushing	2	2	
23	2KT3-006	Pin	2	2	
24	2KT3-007	Nylon tube	1	1	140063-0
25	93WF1-11	Rubber cap, 10.5	1	1	153132-0
26	394WF1-001	Machine arm	1	1	
27	488WF2-001	Machine bed	1	1	
28	211WF2-002	Connector	1	1	
29	994361	Upper cover assy	1	1	
30	93WF1-014	Sheet packing	1	1	
31	93WF1-024	Bolt	10	10	
32	93WF1-015	Screw	1	1	
33	93WF1-016	Packing	2	2	
34	93WF1-017	Pipe	1	1	L=20
35		Tube	1	1	
36	93WF1-018	Oil cap	1	1	
37	93WF1-019	Screw	1	1	
38		O-ring	1	1	6.9X1.8A GB 3452.1
39	486WF1-001	Cover plate	1	1	
40		Screw	4	4	GB818-85 M4X6
41	994363	Oil gauge	1	1	
42	7WF4-033	Model label	1	1	
43	7WF4-034	Model label	1	1	
44	93WF8-036	Screw	2	2	
45	386WF2-009	Plate	1	1	
46	42WF2-018	Screw	4	4	
47	394WF1-005	Motor guard	1	1	
48	93WF19-008	Screw	3	3	
49	449WF2-002	Guard	1	1	
50	394WF24-001	Bracket	1	1	
51	394WF1-004	Base	1	1	
52	93WF7-014	Screw	4	4	
53	411WF1-008	Wire cover	1	1	
54	13WF2-008	Screw	2	2	
55	93WF1-009	Washer	2	2	
56	386WF2-009	Plate	1	1	
57	42WF2-018	Screw	4	4	

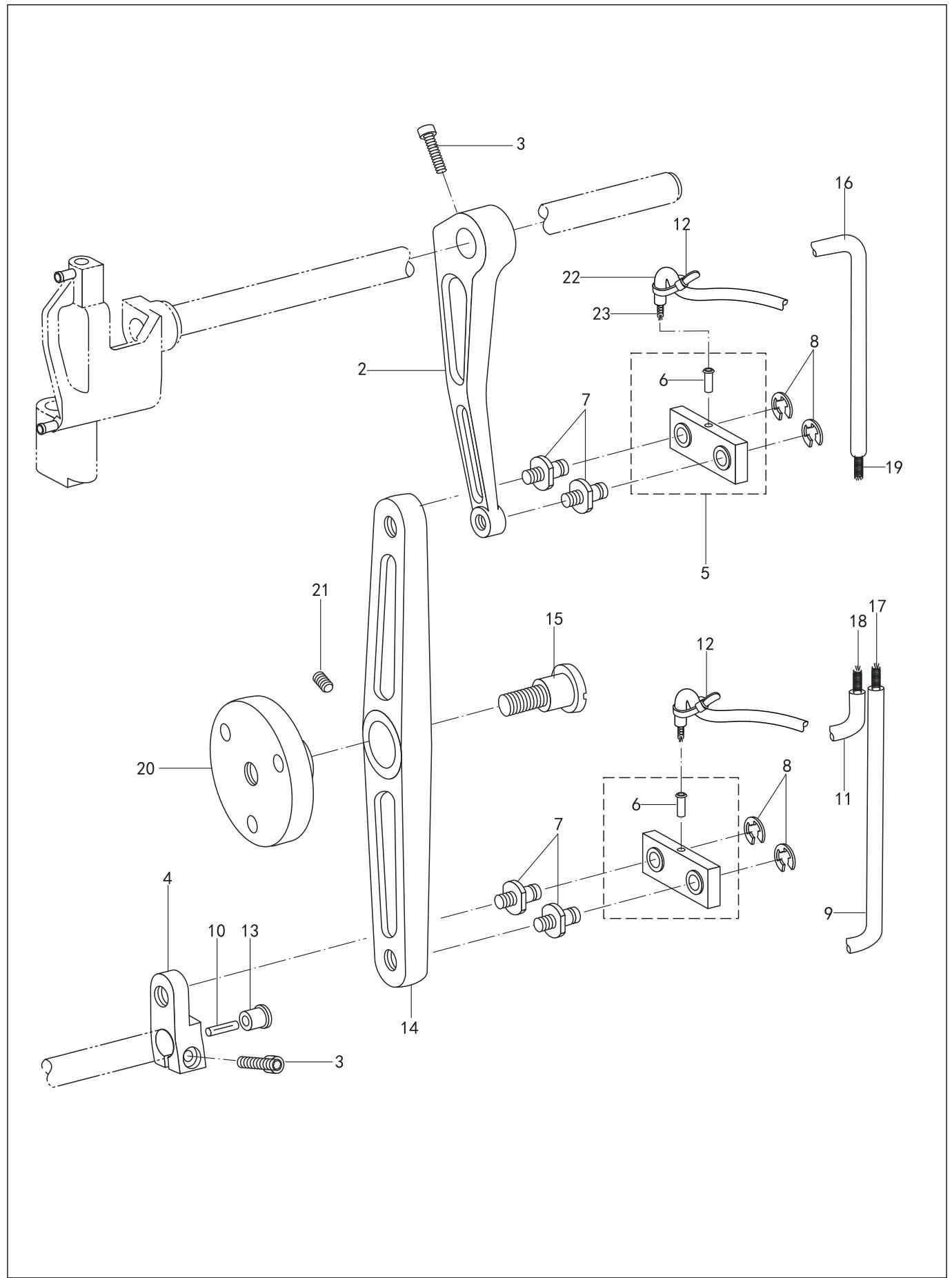
2. Upper shaft mechanism



2. Upper shaft mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	994010	Upper shaft	1	1	6204-2ZNR 20×47×14
2	994018	Crank motion cam	1	1	
3		Bearing, upper shaft	1	1	
4	93WF2-001	Screw	1	1	
5	93WF1-027	Set screw	5	5	
6	93WF1-026	Bolt	2	2	GB/T 80 M8×12
7	93WF2-008	Set screw	3	3	
8	994014	Balancer	1	1	
9		Set screw	1	1	
10	994012	Collar, middle upper shaft	1	1	
11	93WF2-012	Bearing	1	1	62/22-2Z 22×50×14
12	994226	Collar, bobbin winder	1	1	
13	213WF-013	Upper belt pulley	1	1	
14	93WF2-014	Set screw	2	2	
15	93WF2-015	Set screw	1	1	
16	394WF2-001A	Bearing	1	1	M6X0.75
17	93WF15-011	Screw	1	1	
18	93WF15-012	Screw	1	1	
19	213WF-015	Timing belt	1	1	
20	93WF2-030	Set screw	2	2	
21	258WF2-006	Machine pulley	1	1	
22	211WF1-014	Bushing	1	1	
23	211WF1-013	Washer	4	4	
24	213WF-002	Tensioner	1	1	
25	211WF3-007	Block	1	1	
26	211WF3-005	Pin shaft	1	1	
27	W01462	Retaining ring	2	2	
28	93WF5-030	Screw	2	2	
29	211WF3-006	Shaft	1	1	
30	57WF-009	Screw	1	1	
31	13WF3-002	Washer	1	1	
32	89WF5-017	Screw	2	2	

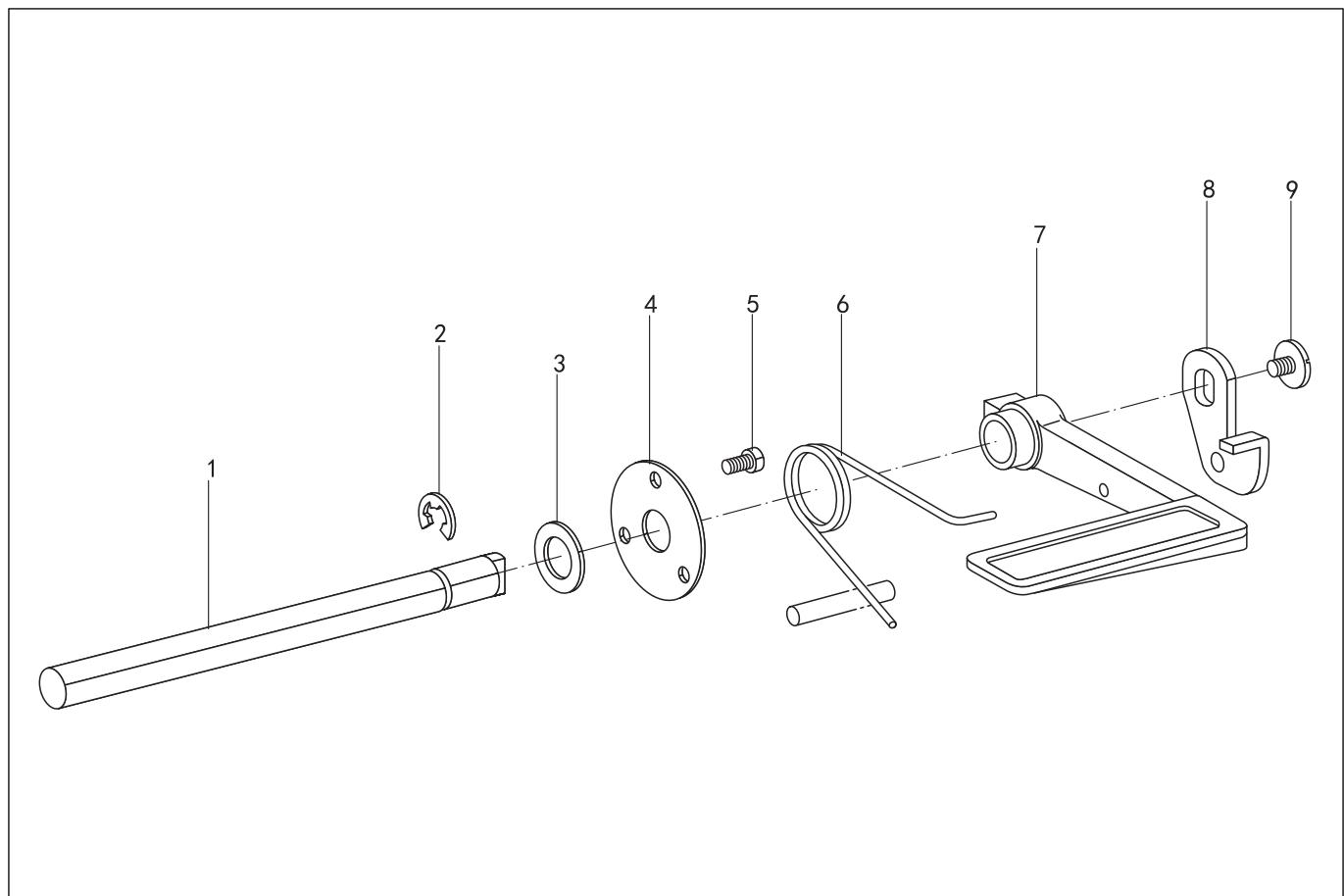
3. Upper feed mechanism



3. Upper feed mechanism

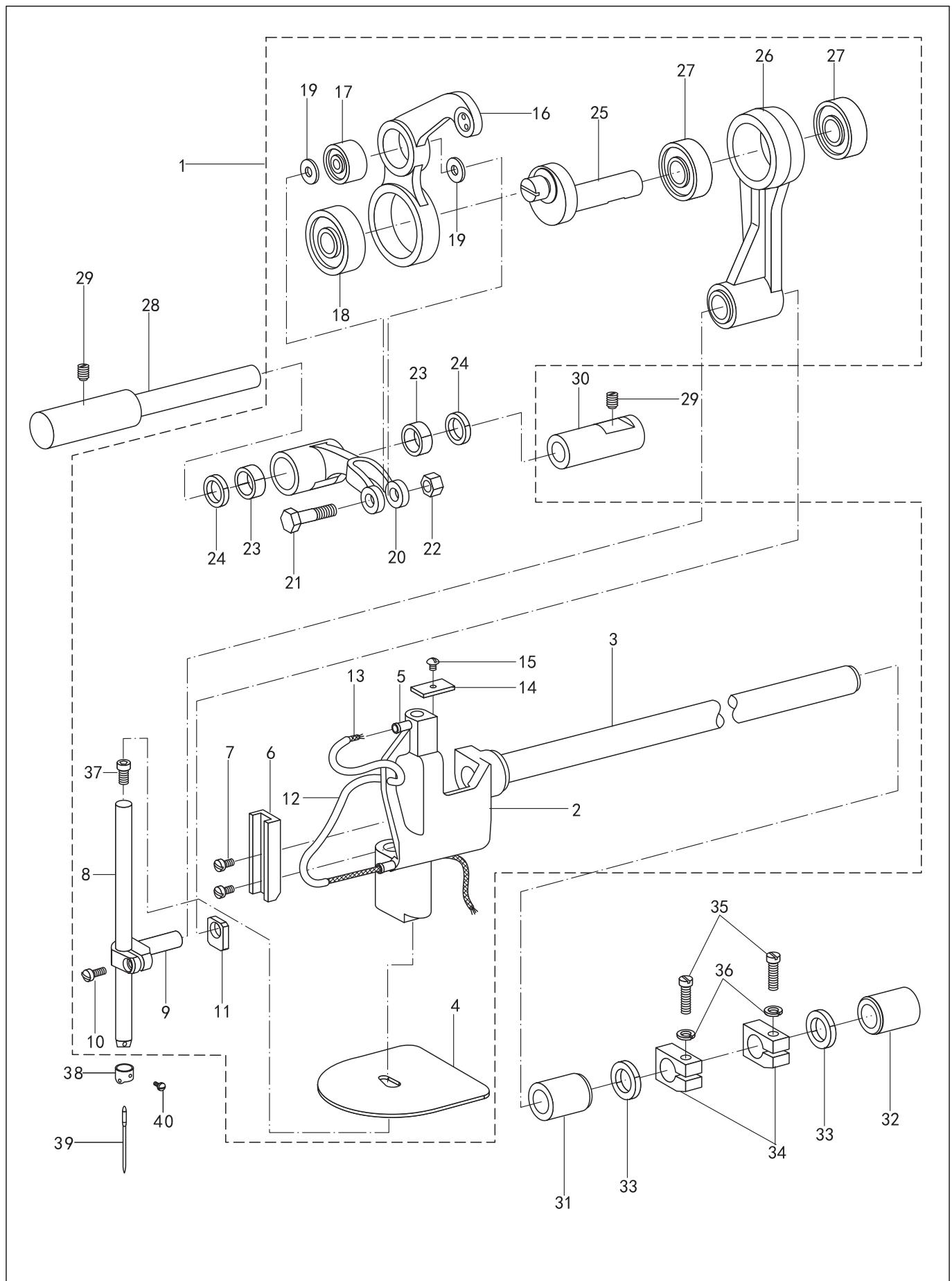
NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	994217C	Upper feed connecting rod assy	1	1	
2	994217	Upper feed connecting rod	1	1	
3	93WF3-005	Bolt	2	2	
4	994218	Connecting lever	1	1	
5	994220	Upper feed connection assy	2	2	
6	93WF3-001	Pipe	2	2	
7	93WF3-002	Shoulder screw	4	4	
8		Retaining ring	4	4	GB 896 8
9		Tube	1	1	φ5X280
10	0148-F	Felt	1	1	3×8
11		Oil tube	1	1	φ5X180
12	93WF3-009	Fastening band	3	3	3X80
13	994082	Rubber cap	1	1	
14	211WF3-002	Link assy.	1	1	
	211WF3-002A	Link	1	1	
15	211WF3-002B 008018	Bush	1	1	
16		Screw	1	1	
17		Oil tube	1	1	φ7X180
18		Oil wick	1	1	3X550
		Oil wick	1	1	3X500
19		Oil wick	1	1	3X500
20	211WF3-003	Block	1	1	
21	213WF-003	Screw	1	1	
22		Oil tube	1	1	φ5X100
23		Oil wick	1	1	3X170

4. Quick reverse mechanism



NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	994206	Shaft, Reverse stitching lever	1	1	
2	93WF4-004	Retaining ring	1	1	
3	93WF4-001	Washer	1	1	
4	93WF4-002	Spacer	1	1	
5		Bolt	3	3	GB/T 70.1 M4×6
6	21WF3-043	Spring	1	1	
7	62WF2-003	Reverse stitching lever	1	1	RAL7015
8	62WF5-024E	Reverse stitching lever plate	1	1	
9	2KT3-005	Screw	1	1	100511-003

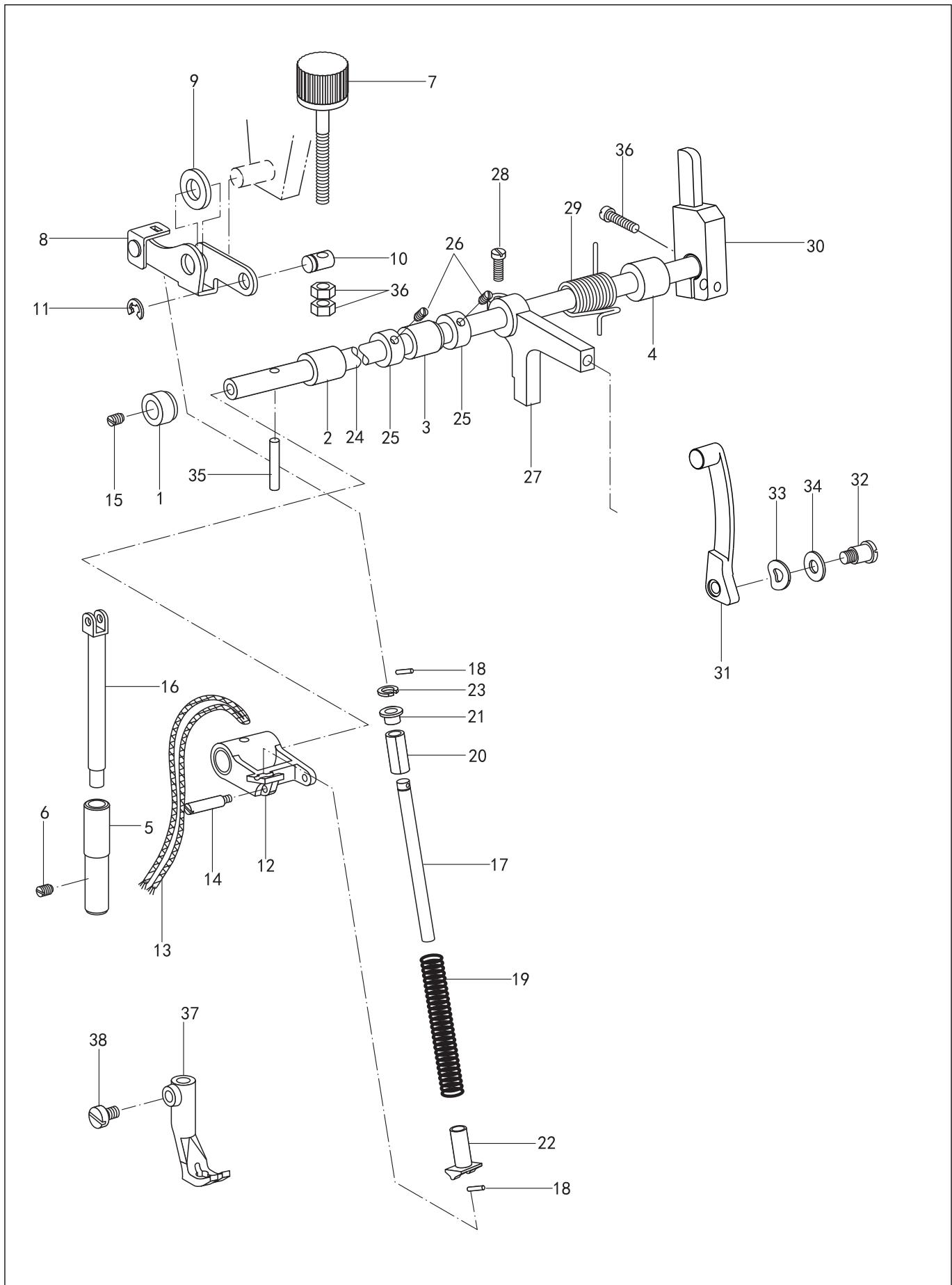
5. Needle bar and thread take-up mechanism



5. Needle bar and thread take-up mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1		Needle bar bracket assy	1	1	
2	99403101	Needle bar bracket	1	1	
3	304WF5-001	Needle bar bracket shaft	1	1	
4	93WF5-001	Rubber sheet	1	1	
5	93WF3-001	Tube	2	2	
6	994047	Guide rail	1	1	
7	491115	Screw	2	2	
8	93WF5-014	Needle bar	1	-	
	997625	Needle bar	-	1	
9	994044	Needle bar clamp	1	1	
10	13WF3-018	Screw	1	1	
11	994045	Slide block, N-bar clamp	1	1	
12	994037	Oil tube	1	1	110
13	994035	Oil wick	1	1	700
14	93WF5-003	Sponge	1	1	
15		Screw	1	1	GB/T 65 M4×6
16	386WF1-025	Thread take-up lever complete	1	1	
17	491049	Bearing, S, T-take-up	1	1	80024 4×13×5
18	491050	Bearing, L, T-take-up	1	1	80018 8×22×7
19	491054	Washer, T-take-up	2	2	GB/97.1 4
20	994022	Thread take-up support	1	1	
21	994024	Support screw	1	1	
22		Nut	1	1	GB/T 6170 M4
23	491056	Needle bearing	2	2	29241/7 7×10×8
24	93WF5-004	Support ring	2	2	
25	994025	Crank	1	1	
26	994026	Needle bar crank rod assy.	1	1	
27		Bearing	2	2	698-2Z 8×19×6
28	994020	Pin, T-take-up	1	1	
29	93WF5-030	Set screw	2	2	
30	93WF5-005	Bushing, T-take-up pin	1	1	
31	93WF5-006	Bushing	1	1	
32	93WF5-007	Bushing	1	1	
33	93WF5-008	Ring	2	2	
34	994042	Collar	2	2	
35	93WF1-029	Bolt	2	2	
36		Washer, spring	2	2	GB 859 5
37	200WF5-009	Screw	1	1	
38	93WF5-002	Thread guide	1	-	
39		Needle	1	2	DP×17 19#
40	17WF5-037	Screw	1	-	

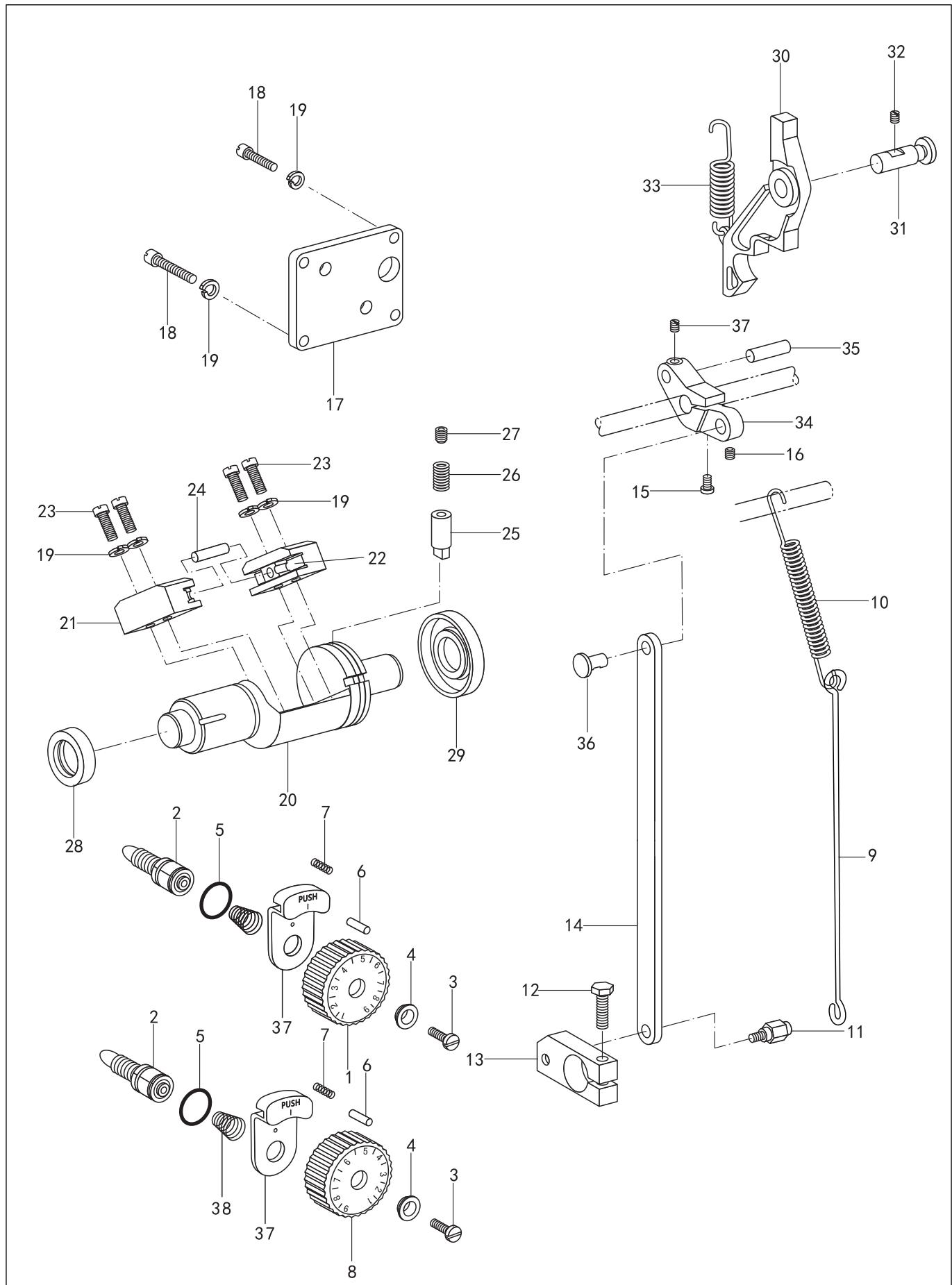
6. Presser bar mechanism



6. Presser bar mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	93WF6-001	Bushing A, P-foot lifter shaft	1	1	
2	93WF6-002	Bushing B	1	1	
3	93WF6-003	Bushing C, P-foot lifter shaft	1	1	
4	93WF6-004	Bushing D	1	1	
5	93WF6-021	Bushing, P-bar	1	1	
6	93WF5-030	Set screw	1	1	
7	93WF6-005b	Pressure adjusting screw	1	1	RAL 7015
8	994073	Pressure adjusting plate assy.	1	1	
9	93WF6-006	Felt	1	1	
10	994079	Pin	1	1	
11	93WF6-007	Retaining ring	1	1	
12	994159	P-foot lifter connection assy.	1	1	
13	994160	Oil wick	1	1	400
14	994161	Pin	1	1	
15	93WF2-015	Set screw	1	1	
16	386WF5-002	Presser bar	1	1	
17	994077	Shaft, presser bar spring	1	1	
18		Pin	2	2	GB/T 879. 1 3×8
19	93WF6-008	Presser spring	1	1	
20	93WF6-009	Collar	1	1	
21	994075	Spring support, U	1	1	
22	994076	Spring support, D	1	1	
23	93WF6-031	Retaining ring	1	1	
24	994158	Presser bar lifter shaft	1	1	
25	93WF6-010	Collar	2	2	
26	93WF2-008	Set screw	2	2	
27	994383	Knee lifter arm, U	1	1	
28	93WF6-035	Bolt	1	1	
29	994166	Spring	1	1	
30	394WF6-002	K-lifter connecting bar assy.	1	1	
31	394WF6-001	Knee lifter connecting bar	1	1	
32	93WF6-013	Screw	1	1	
33	93WF6-044	Washer	1	1	
34	93WF6-015	Washer	1	1	
35	93WF6-020	Pin	1	1	
36	30804	Nut	1	1	
37	93WF13-003	Walking foot	1	—	
38	93WF13-004	Screw	1	—	

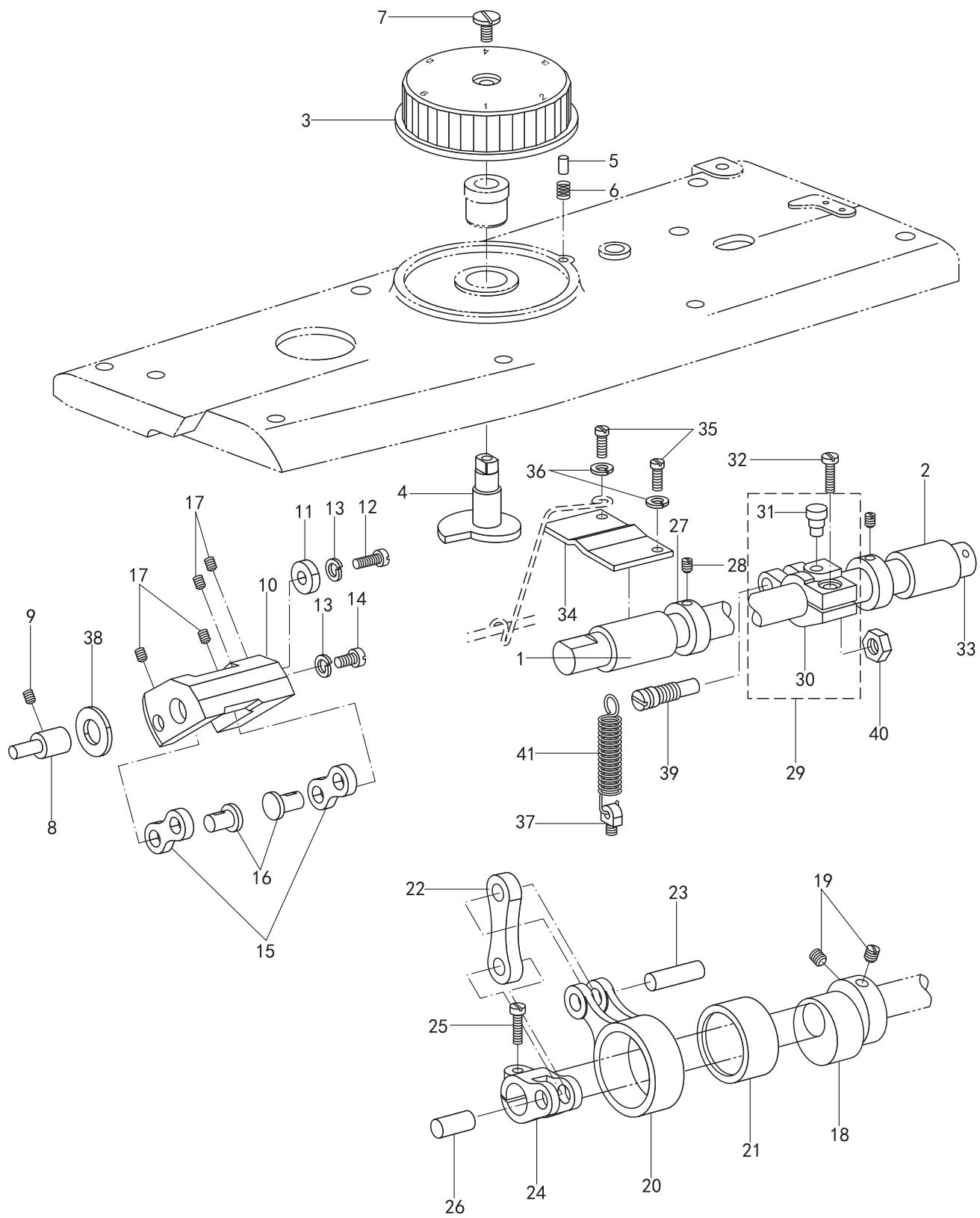
7. Feed mechanism



7. Feed mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	386WF4-017	Feed adjusting dial, U	1	1	
2	386WF4-015	Adjusting screw	2	2	
3	27WF3-005	Screw	2	2	
4	36T5-007D4	Bushing	2	2	
5	124T5-001A3	O ring	2	2	
6	386WF4-014	Positioning pin	2	2	
7	22T5-009	Spring, compression	2	2	
8	386WF4-018	Feed adjusting dial, D	1	1	
9	211WF3-010	Linking bar	1	1	
10	994345	Spring	1	1	
11	994352	Bar screw	1	1	
12	93WF7-033	Screw	1	1	
13	994351	Block	1	1	
14	211WF3-004	Link	1	1	
15		Screw	1	1	GB/T65 M5X25
16	93WF7-029	Screw	2	2	
17	93WF1-028	Setting plate	1	1	
18	93WF7-014	Bolt	4	4	
19		Washer	8	8	GB 859 5
20	994343	Roller	1	1	
21	994349	Guide rail	2	2	
22	994347	Guide rail	2	2	
23	93WF1-029	Bolt	4	4	
24	994350	Pin	1	1	
25	994353	Cylinder guide pin	1	1	
26	994233	Spring	1	1	
27		Set screw	1	1	GB/T 77 M10×10
28	93WF7-022	Oil seal, front	1	1	20×30×7
29	93WF7-023	Oil seal, back	1	1	20×47×7
30	994191	Feed adjustment arm	1	1	
31	994192	Pin	1	1	
32	93WF1-027	Set screw	1	1	
33	994193	Spring	1	1	
34	994197	Feed adjusting lever	1	1	
35	93WF7-004	Pin	1	1	
36	994118	Pin	1	1	
37	386WF4-013	Stopper	2	2	
38	36T5-011	Spring	2	2	

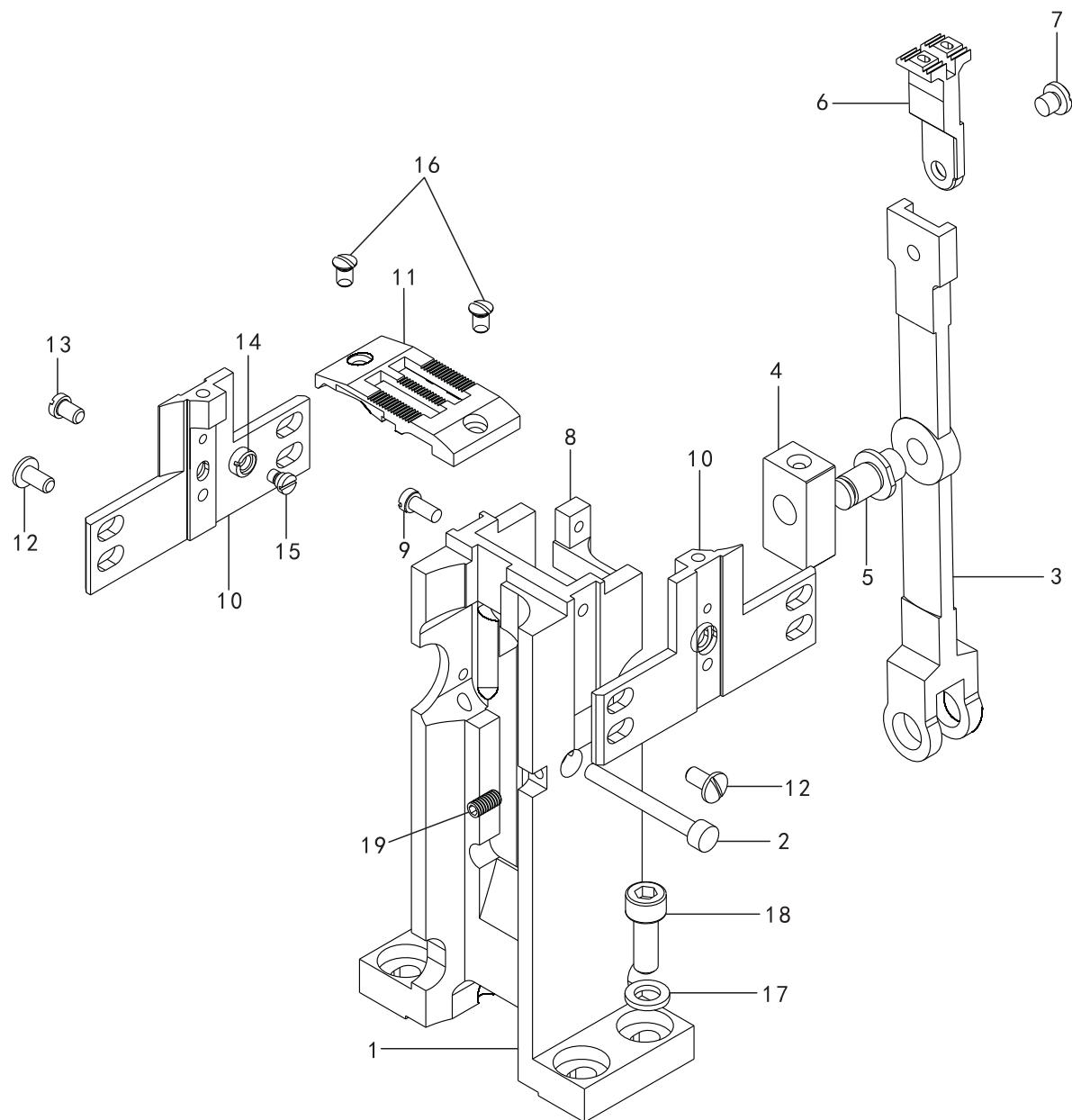
8. Presser foot adjusting mechanism



8. Presser foot adjusting mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	994123	Bushing, adjusting shaft	1	1	RAL7015
2	93WF5-007	Bushing	1	1	
3	93WF8-001	Dial	1	1	
4	994130	Dial cam	1	1	
5	994131	Dial pin	1	1	
6	93WF8-002	Spring	1	1	
7	302395	Set screw	1	1	
8	994110	Support pin	1	1	
9	93WF5-030	Set screw	1	1	
10	994106	Adjusting bracket	1	1	
11	994112	Adjusting bracket collar	1	1	
12	93WF1-026	Bolt	1	1	GB 859 5
13		Washer, spring	2	2	
14	93WF8-037	Bolt	1	1	
15	994117	Link assy.	2	2	
16	994118	Link pin	2	2	
17	93WF8-015	Set screw	4	4	
18	994102	Inner presser cam	1	1	
19	93WF1-027	Set screw	2	2	
20	994104	Link	1	1	
21	93WF8-018	Needle bearing	1	1	HK3016 30×37×16
22	994116	Link	1	1	
23	994105	Pin	1	1	
24	994086	Connecting crank	1	1	
25	93WF6-042	Bolt	1	1	
26	994087	Pin	1	1	GB/T 80 M5×5
27	994109	Collar	2	2	
28	93WF7-029	Set screw	2	2	
29	994132	Connecting lever assy.	1	1	
30	99413201	Connecting lever	1	1	
31	99413202	Pin	1	1	
32	93WF3-005	Bolt	1	1	
33	304WF8-001	Adjusting shaft	1	1	
34	994120	Support plate	1	1	
35	93WF8-031	Bolt	2	2	
36		Washer	2	2	GB 859 4
37	93WF8-003	Support screw	1	1	
38	93WF8-004	Felt	1	1	
39	994133	Spring hook	1	1	
40		Nut	1	1	
41	117WF8-001	Spring	1	1	GB/T 6172 M8

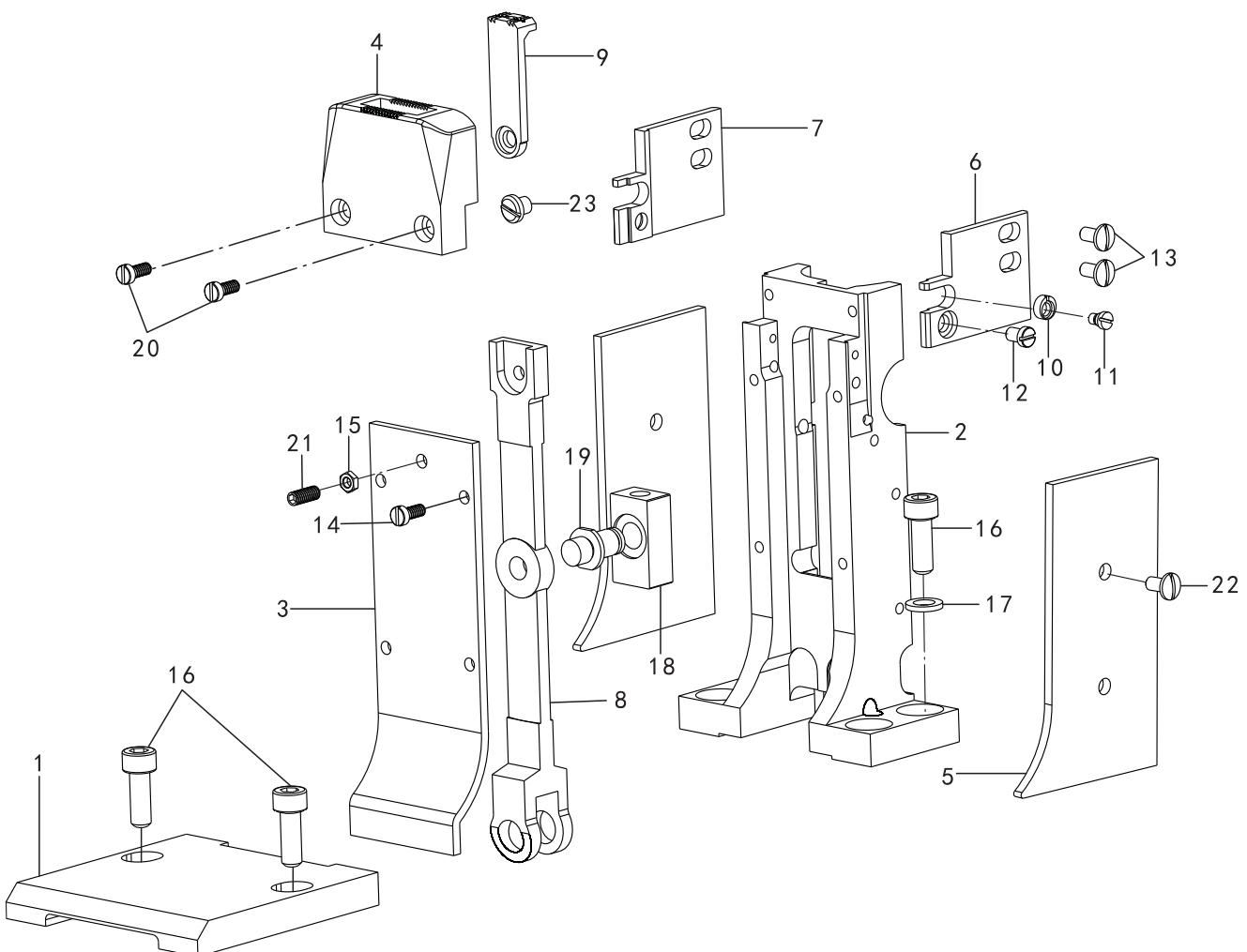
9. Post bed mechanism (2-needle)



9. Post bed mechanism (2-needle)

NO.	PARTS NO.	PARTS NAME	QTY	REMARK
			24676L14D2T5	
1	386WF2-008	Post bed	1	
2	386WF4-006	Screw	1	
3	386WF4-003	Feed plate	1	
4	386WF4-004	Slide block	1	
5	386WF4-005	Shaft	1	
6	386WF4-001B	Feed dog 8mm	1	
	386WF4-001C	Feed dog 10mm	1	
7	386WF4-002	Screw	1	
8	386WF4-009	Guide plate	1	
9	386WF4-010	Screw	2	
10	386WF2-010B	Support plate 8mm	2	
	386WF2-010C	Support plate 10mm	2	
11	386WF2-006B	Needle plate 8mm	1	
	386WF2-006C	Needle plate 10mm	1	
12	13WF2-040	Screw	8	
13	386WF2-011	Screw	2	
14	240WF2-021B	Eccentric	2	
15	240WF2-021C	Screw	2	
16	386WF2-007	Screw	2	
17	17WF2-010	Washer	4	
18	42WF2-018	Screw	4	
19	123WF3-094	Screw	1	

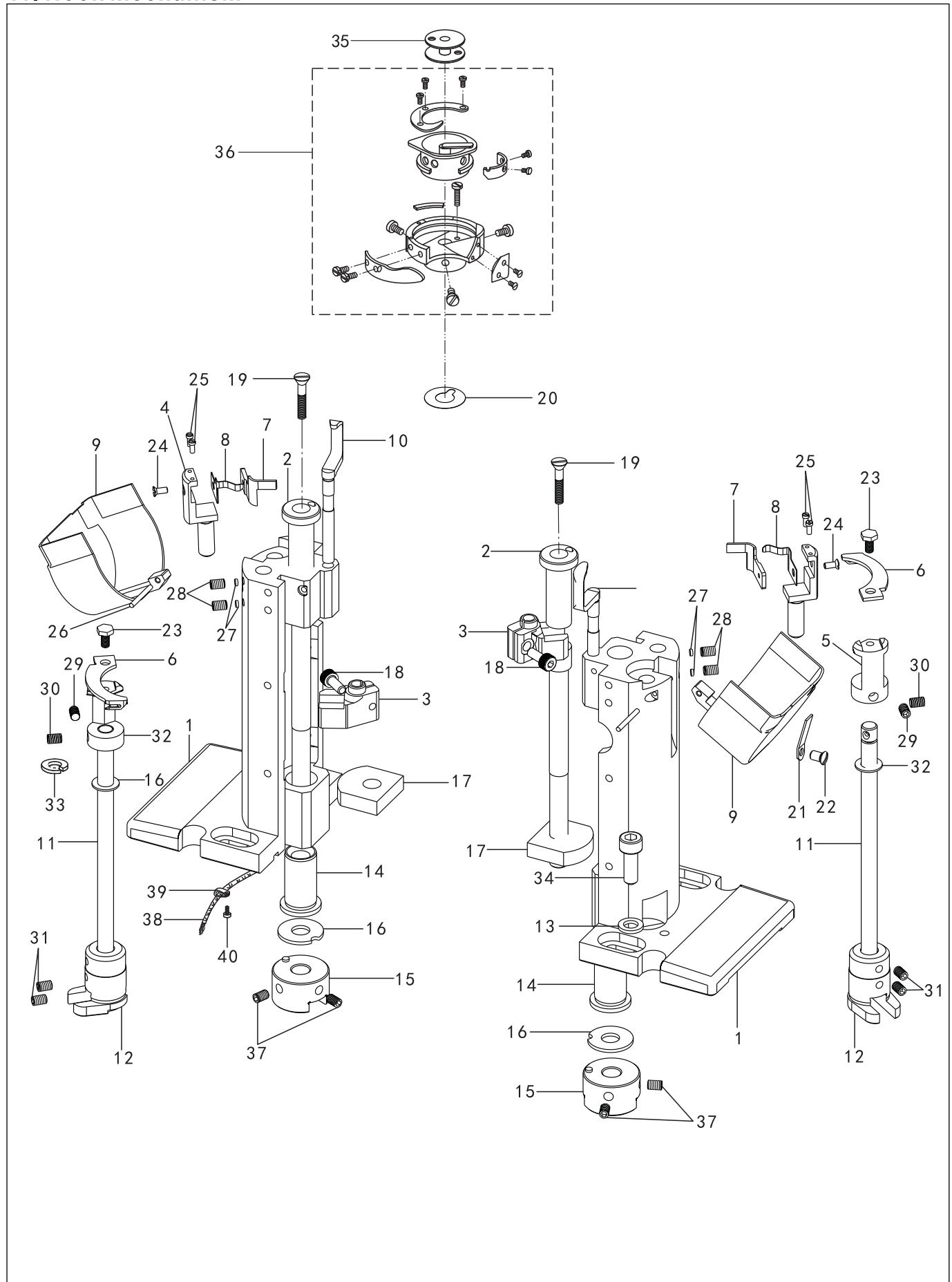
10. Post bed mechanism



10. Post bed mechanism

NO.	PARTS NO.	PARTS NAME	QTY	REMARK
			24677L14D2T5	
1	450WF2-007	Cover	1	
2	450WF2-002	Post bed	1	
3	450WF2-006	Plate	1	
4	450WF2-001	Needle plate	1	
5	450WF2-005	Plate	2	
6	450WF2-003	Support plate(front)	1	
7	450WF2-004	Support plate (back)	1	
8	386WF4-003	Feed plate	1	
9	450WF4-001	Feed dog	1	
10	240WF2-021B	Eccentric	1	
11	340WF2-021C	Screw	1	
12	386WF2-011	Screw	2	
13	13WF2-040	Screw	4	
14	13WF3-018	Screw	4	
15		Nut	1	GB6170 M5
16	42WF2-018	Screw	4	
17	72WF-010	Washer	4	
18	386WF4-004	Slide block	1	
19	386WF4-005	Shaft	1	
20	13WF3-018	Screw	2	
21	89WF5-017	Screw	1	
22	13WF2-040	Screw	4	
23	386WF4-002	Screw	1	

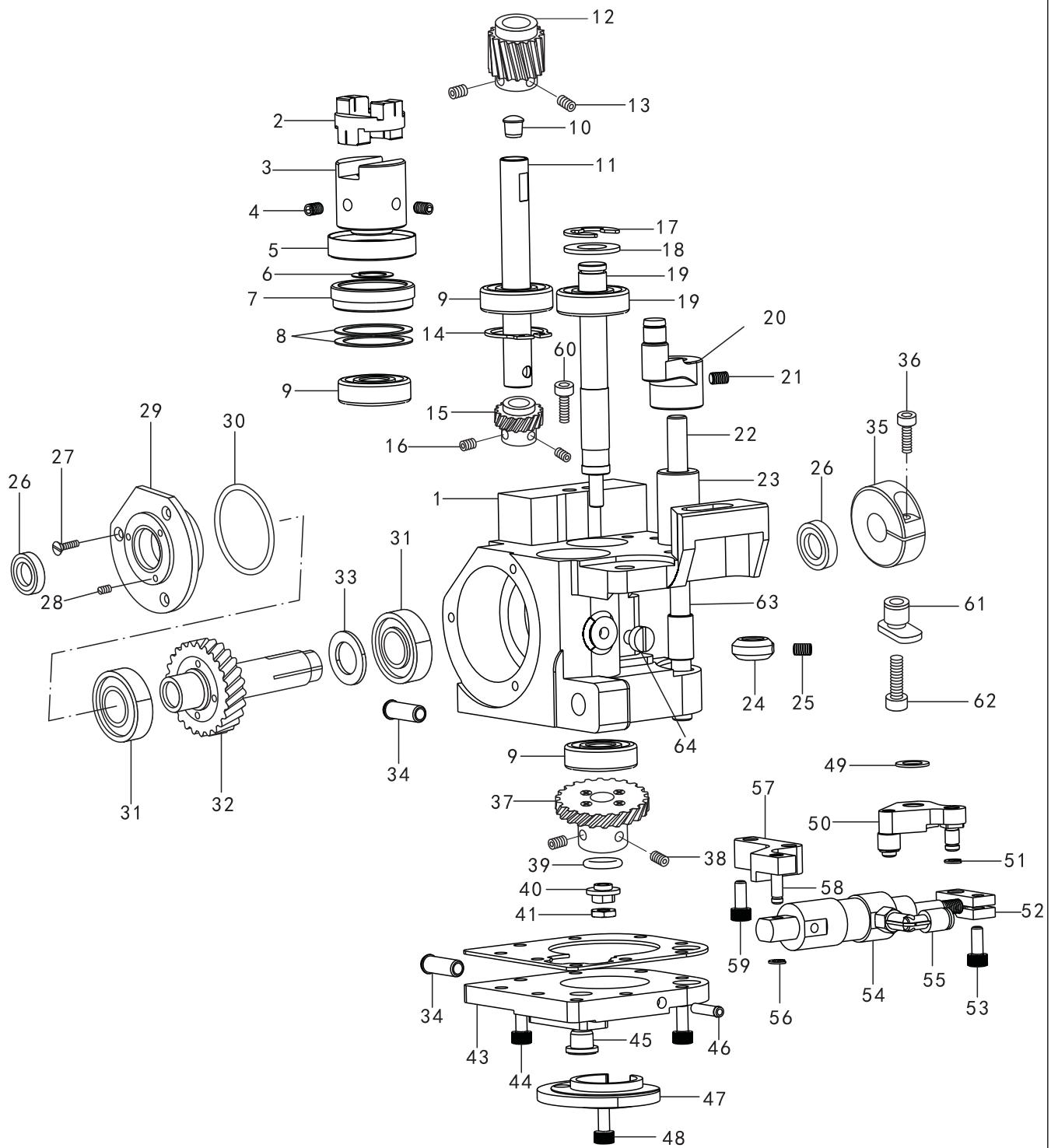
11. Hook mechanism



11. Hook mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	386WF2-002	Hook post saddle	1	2	
2	386WF1-005	Hook shaft	1	2	
3	386WF1-009	Bracket	1	2	
4	386WF3-004	Fixed knife bracket	1	2	
5	386WF3-008	Fixed knife base	1	2	
6	386WF3-006	Movable knife	1	2	
7	386WF3-001	Fixed knife	1	2	
8	386WF3-003	Bobbin thread catch spring	1	2	
9	386WF2-003	Hook cover	1	2	
10	386WF1-008	Opener	1	2	
11	386WF3-011	Trimming shaft	1	2	
12	386WF3-013	Trimming crank	1	2	
13	72WF1-010	Washer	2	4	
14	386WF1-007	Bush	1	2	
15	386WF1-010	Coupling (upper)	1	2	
16	386WF1-024	Washer	1	2	
17	386WF1-006	Oil felt	1	2	
18	89WF2-016	Screw	1	2	
19	386WF1-003	Screw	1	2	
20	386WF1-004	Washer	1	2	
21	386WF2-005	Spring plate	1	2	
22	13WF1-015	Screw	1	2	
23	386WF-007	Screw	1	2	
24	13WF3-031	Screw	1	2	
25	386WF3-002	Screw	2	4	
26	386WF2-004	Pin	1	2	
27	386WF3-005	Washer	2	4	
28	123WF3-003	Screw	2	4	
29	386WF3-009	Screw	1	2	
30	386WF3-010	Screw	1	2	
31	80WF6-036	Screw	2	4	
32	386WF3-012	Washer	1	2	
33		Retaining ring	1	2	GB896 8
34	42WF2-018	Screw	2	4	
35	386WF1-002	Bobbin	1	2	
36	386WF1-001	Hook	1	2	
37	386WF1-011	Screw	2	4	
38	386WF1-012	Oil wick assy.	1	2	
39	1WF6-036	Oil tube clamp	1	2	
40	13WF2-040	Screw	1	2	

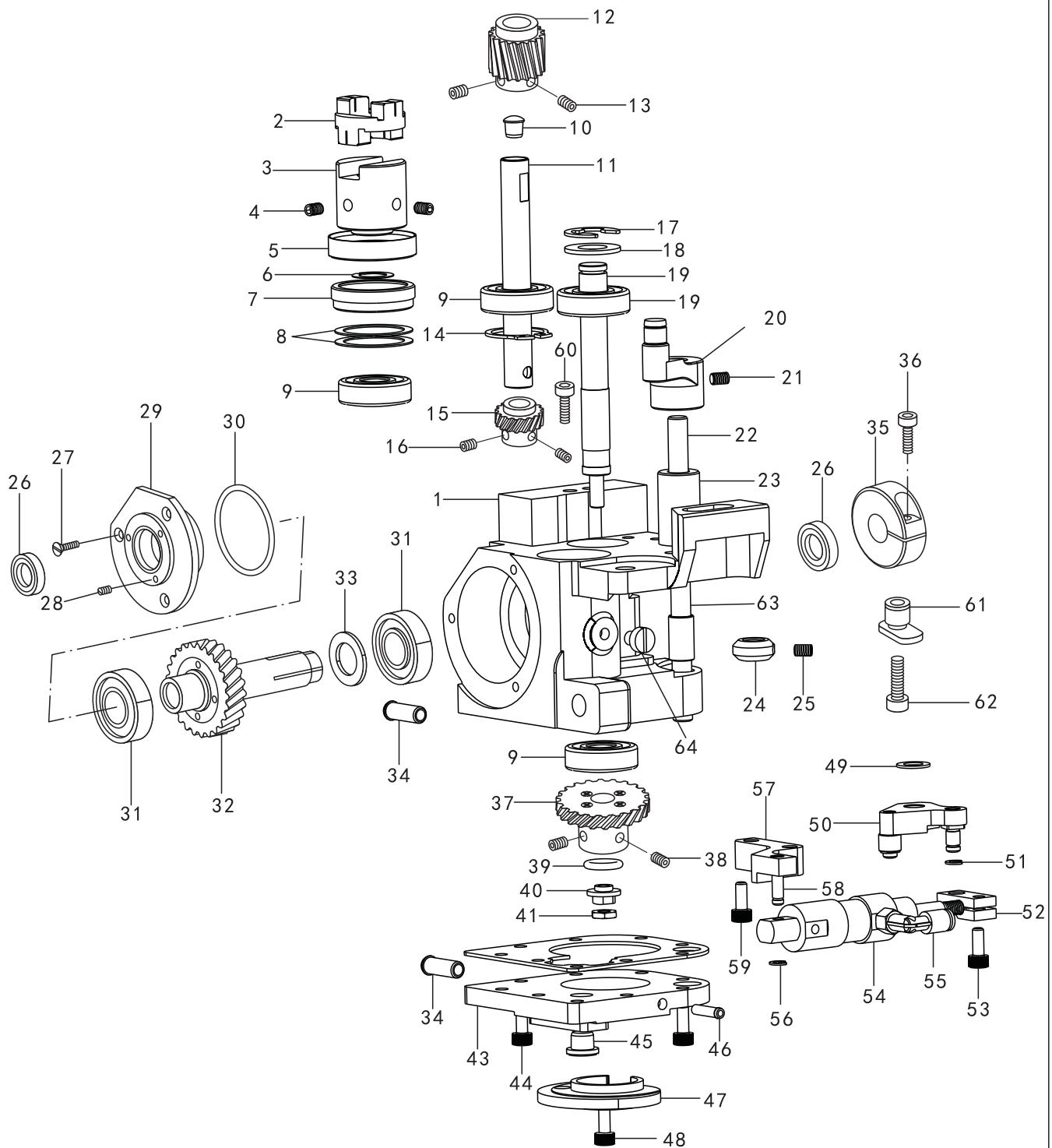
12. Hook gear mechanism (right)



12. Hook gear mechanism (right)

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	386WF2-014	Hook gear saddle	1	1	
2	386WF1-013	Connector	1	1	
3	386WF1-023	Coupling (lower)	1	1	
4	42WF2-010	Screw	2	2	
5	386WF1-022	Cover	1	1	
6	386WF1-021	Washer	1	1	
7	386WF1-020	Base	1	1	
8	386WF1-019	Washer	2	2	
9		Bearing	3	3	Φ10×Φ26×8
10	386WF2-026	Plastic plug	1	1	
11	386WF1-018	Hook shaft	1	1	
12	93WF14-003	Gear	1	1	
13	93WF7-029	Screw	2	2	
14		Retaining ring	1	1	GB893. 1 26
15	93WF14-002	Gear	1	1	
16	93WF7-029	Screw	2	2	
17		Retaining ring	1	1	GB896 8
18	386WF3-029	Washer	1	1	
19	386WF3-027	Trimming cam shaft	1	1	
20	386WF3-014	Trimming crank assy.	1	1	
21	123WF3-094	Screw	2	2	
22	386WF3-015	Trimming crank shaft	1	1	
23	386WF3-016	Bush	1	1	
24	386WF3-017	Collar	1	1	
25	80WF6-036	Screw	2	2	
26	93WF14-015	Oil seal	2	2	
27		Screw	3	3	GB/T68 M4×6
28	B1245032	Screw	3	3	
29	386WF1-017	Cover	1	1	
30	93WF14-005	O-ring	1	1	
31		Bearing	2	2	Φ15×Φ32×8
32	93WF14-047	Gear assy.	1	1	
33	93WF14-023	Washer	1	1	
34	386WF2-017	Joint	2	2	
35	93WF14-025	Block	1	1	
36	42WF2-018	Screw	1	1	
37	93WF14-048	Gear assy.	1	1	
38	42WF2-010	Screw	2	2	
39	33T2-030-A	Oil seal	1	1	
40	386WF3-026	Block	1	1	

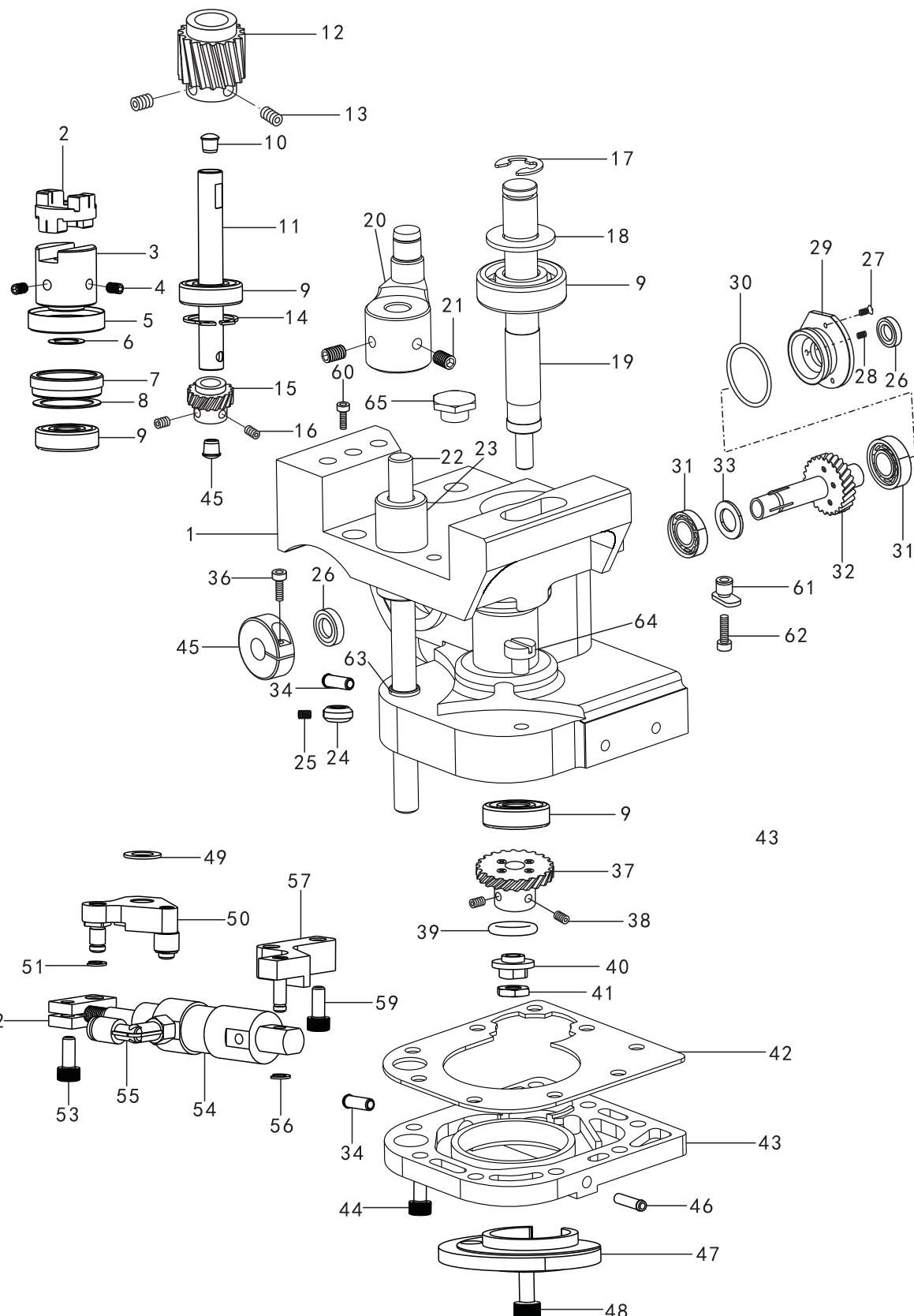
12. Hook gear mechanism (right)



12. Hook gear mechanism (right)

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
41	386WF3-025	Screw	1	1	
42	386WF2-021	Washer	1	1	
43	386WF2-016	Bottom cover	1	1	
44	18WF3-021	Screw	6	6	
45	386WF2-019	Plastic plug	1	1	
46	386WF2-018	Joint	1	1	
47	386WF3-024	Trimming cam	1	1	
48	6K2-019	Screw	3	3	
49	386WF3-012	Washer	1	1	
50	386WF3-020	Crank assy.	1	1	
51		Retaining ring	1	1	
52	386WF3-021	Block	1	1	
53	18WF3-021	Screw	1	1	
54	386WF3-022	Cylinder	1	1	
55	386WF3-030	Joint	1	1	
56		Retaining ring	1	1	
57	386WF3-023B	Bracket	1	1	
58	386WF3-023A	Pin	1	1	
59	6K2-020	Screw	2	2	
60	386WF2-024	Screw	1	1	
61	93WF14-044	Block	1	1	
62	93WF14-043	Screw	1	1	
63	386WF3-018	Bush	1	1	
64	19WF1-010	Screw	1	1	

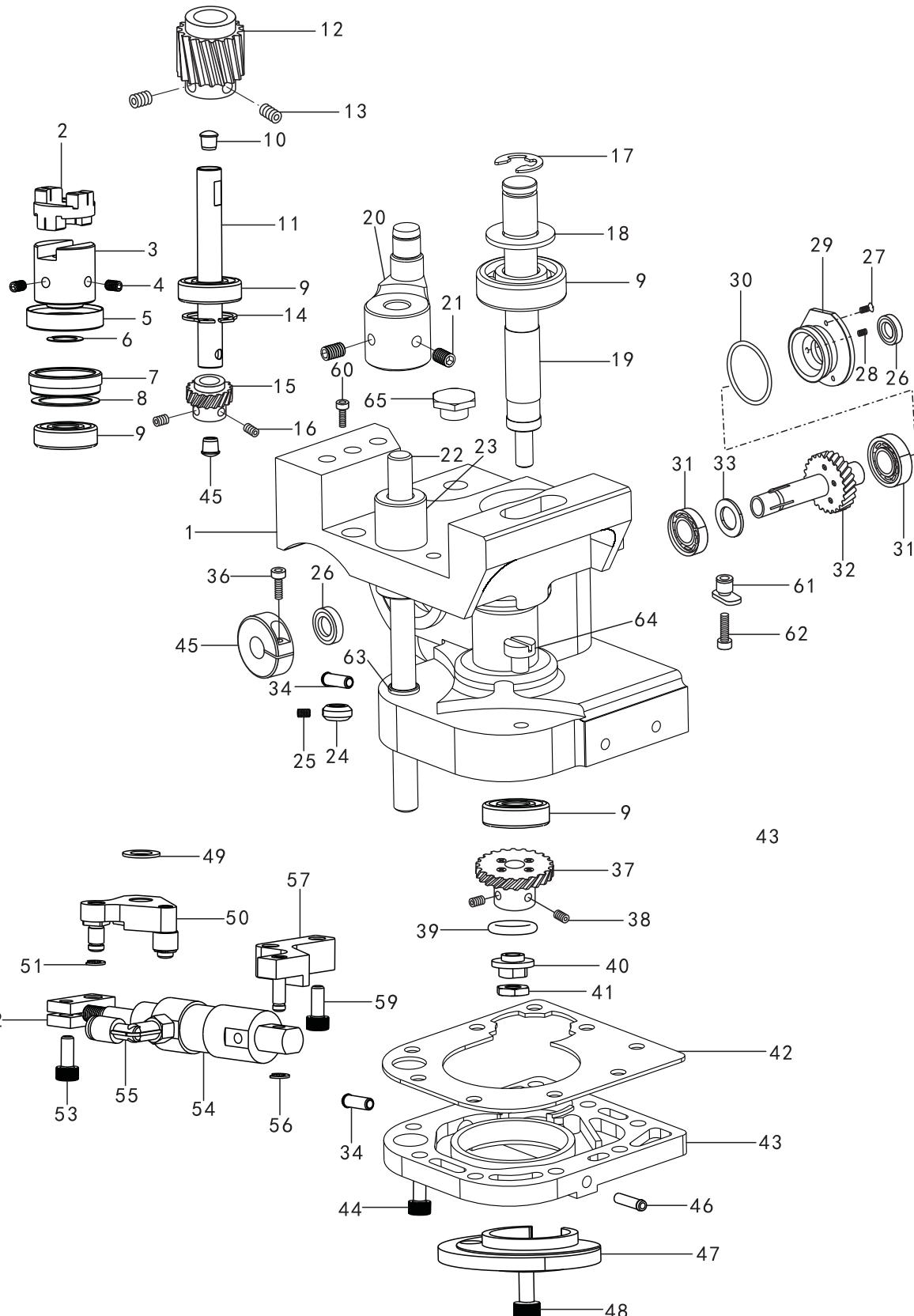
13. Hook gear mechanism (left)



13. Hook gear mechanism (left)

NO.	PARTS NO.	PARTS NAME	QTY	REMARK
			24676L14D2T5	
1	386WF2-014	Hook gear saddle (left)	1	
2	386WF1-013	Connector	1	
3	386WF1-023	Coupling (lower)	1	
4	42WF2-010	Screw	2	
5	386WF1-022	Cover	1	
6	386WF1-021	Washer	1	
7	386WF1-020	Base	1	
8	386WF1-019	Washer	2	
9		Bearing	3	Φ10×Φ26×8
10	386WF2-026	Plastic plug	1	
11	386WF1-018	Hook shaft	1	
12	93WF14-003	Gear	1	
13	93WF7-029	Screw	2	
14		Retaining ring	1	GB893. 1 26
15	93WF14-002	Gear	1	
16	93WF7-029	Screw	2	
17		Retaining ring	1	GB896 8
18	386WF3-029	Washer	1	
19	386WF3-027	Trimming cam shaft	1	
20	386WF3-014	Trimming crank assy.	1	
21	123WF3-094	Screw	2	
22	386WF3-015	Trimming crank shaft	1	
23	386WF3-016	Bush	1	
24	386WF3-017	Collar	1	
25	80WF6-036	Screw	2	
26	93WF14-015	Oil seal	2	
27		Screw	3	GB/T68 M4×6
28	B1245032	Screw	3	
29	386WF1-017	Cover	1	
30	93WF14-005	O-ring	1	
31		Bearing	2	Φ15×Φ32×8
32	93WF14-047	Gear assy.	1	
33	93WF14-023	Washer	1	
34	386WF2-017	Joint	2	
35	93WF14-025	Block	1	
36	42WF2-018	Screw	1	
37	93WF14-048	Gear assy.	1	
38	42WF2-010	Screw	2	
39	33T2-030-A	Oil seal	1	
40	386WF3-026	Block	1	

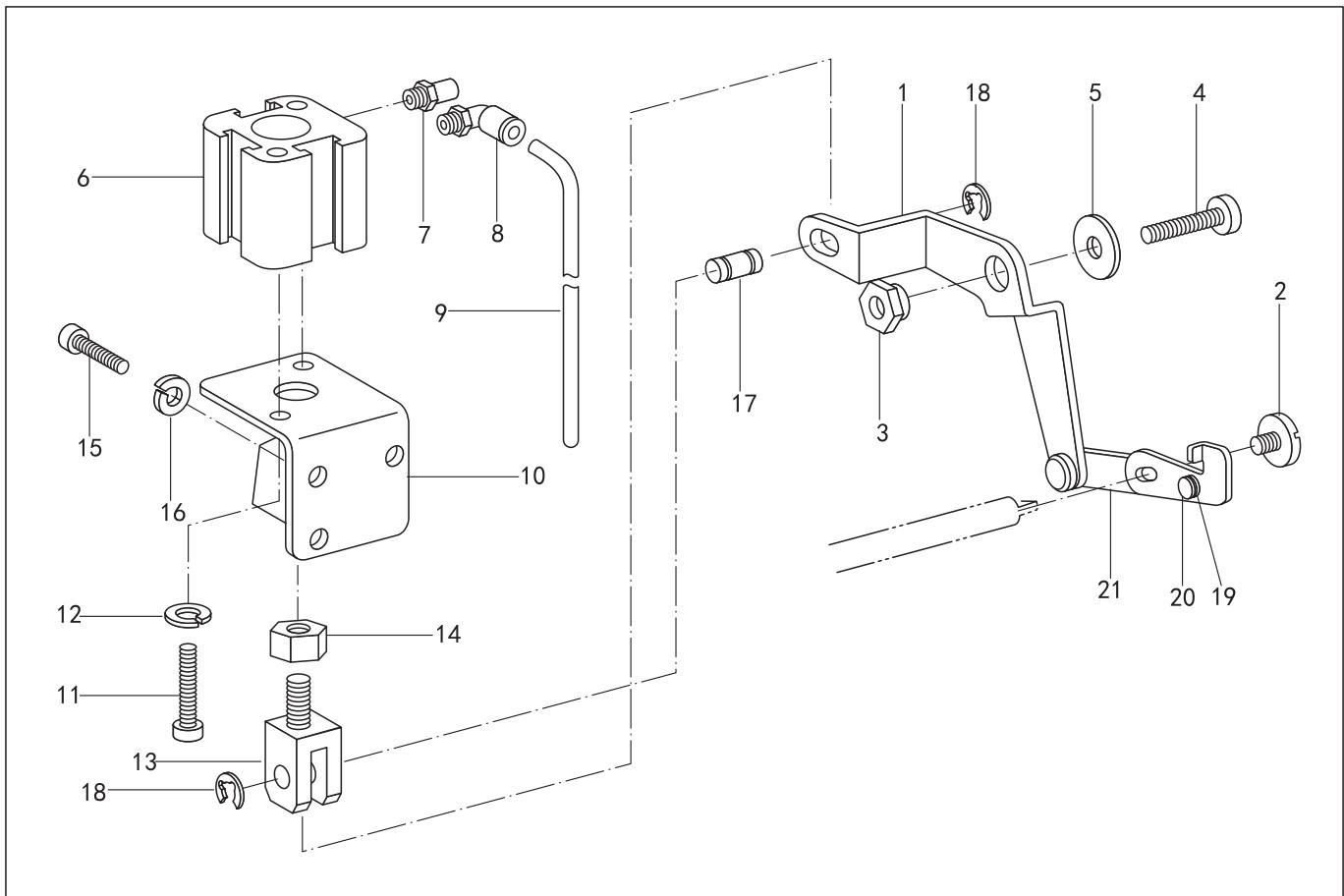
13. Hook gear mechanism (left)



13. Hook gear mechanism (left)

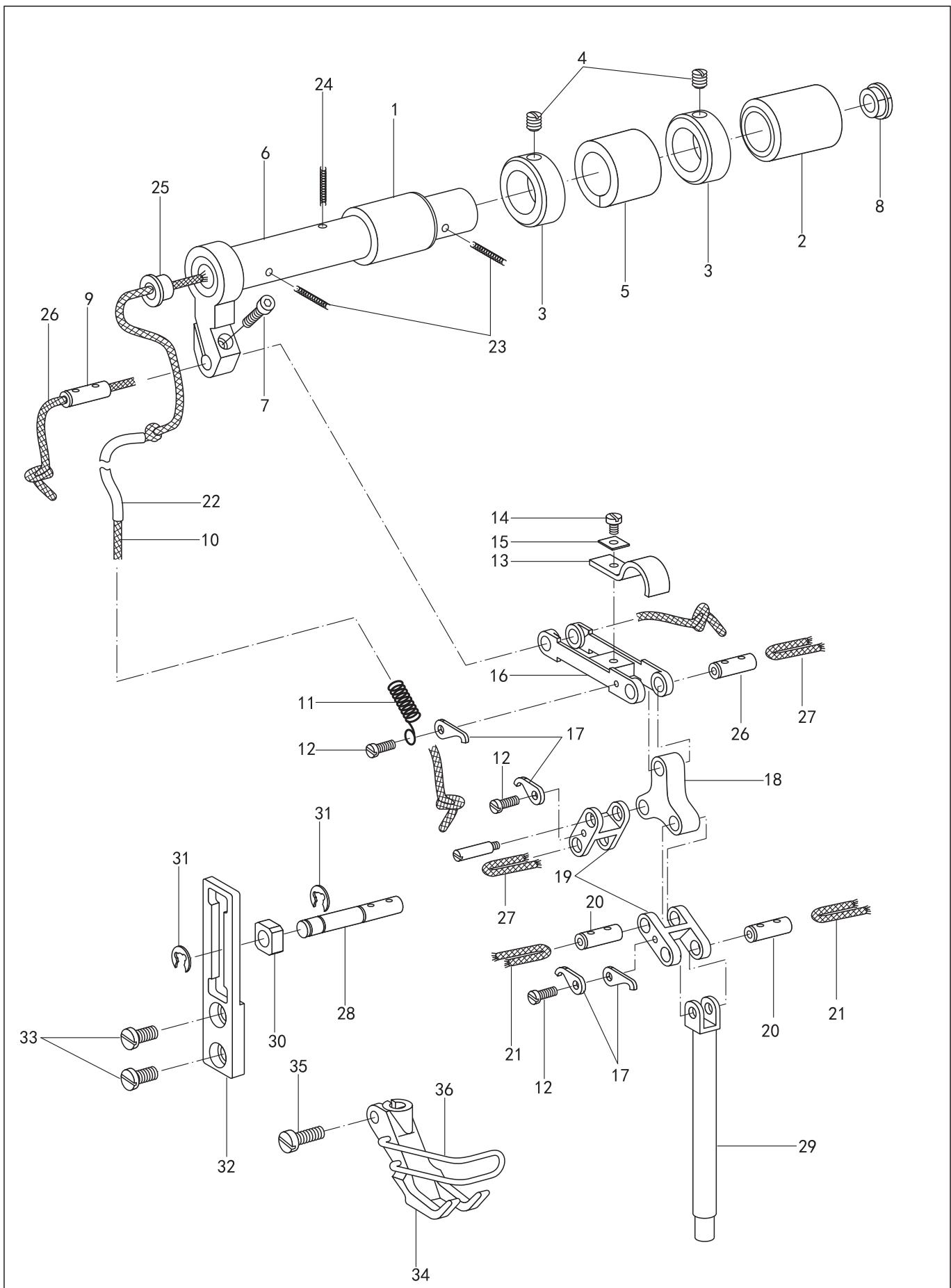
NO.	PARTS NO.	PARTS NAME	QTY	REMARK
			24676L14D2T5	
41	386WF3-025	Screw	1	
42	386WF2-021	Washer	1	
43	386WF2-016	Bottom cover	1	
44	18WF3-021	Screw	6	
45	386WF2-019	Plastic plug	1	
46	386WF2-018	Joint	1	
47	386WF3-024	Trimming cam	1	
48	6K2-019	Screw	3	
49	386WF3-012	Washer	1	
50	386WF3-020	Crank assy.	1	
51		Retaining ring	1	
52	386WF3-021	Block	1	
53	18WF3-021	Screw	1	
54	386WF3-022	Cylinder	1	
55	386WF3-030	Joint	1	
56		Retaining ring	1	
57	386WF3-023B	Bracket	1	
58	386WF3-023A	Pin	1	
59	6K2-020	Screw	2	
60	386WF2-024	Screw	1	
61	93WF14-044	Block	1	
62	93WF14-043	Screw	1	
63	386WF3-018	Bush	1	
64	19WF1-010	Screw	1	
65	386WF3-023	Screw	1	

14. Quick reverse mechanism



NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	99421001	Cylinder connection assy.	1	1	
2	2KT3-005	Screw	1	1	
3	62WF5-025	Stud	1	1	
4	21WF2-048	Screw	1	1	SDA25×15 SU046
5	62WF5-026	Washer	1	1	BSL-M5
6	93WF10-004	Cylinder	1	1	APL4-M5
7	93WF7-009	Silencer	1	1	PU4X2
8	93WF7-008	Joint	1	1	
9	214WF-007	Air tube, 4mm	1	1	
10	93WF10-001	Setting plate	1	1	
11	93WF10-006	Bolt	2	2	
12		Washer, spring	2	2	GB859 6
13	994212	Knuckle	1	1	GB/T6172 M6
14		Nut	1	1	
15	93WF7-014	Bolt	3	3	GB/T 859 5
16		Washer, spring	3	3	
17	93WF10-002	Coupling pin	1	1	GB/T 896 4
18		Retaining ring	2	2	
19	62WF5-024D	Nylon washer	2	2	
20	62WF5-024C	Pin	2	2	
21	62WF5-024B	Link rod, reverse stitching lever	1	1	

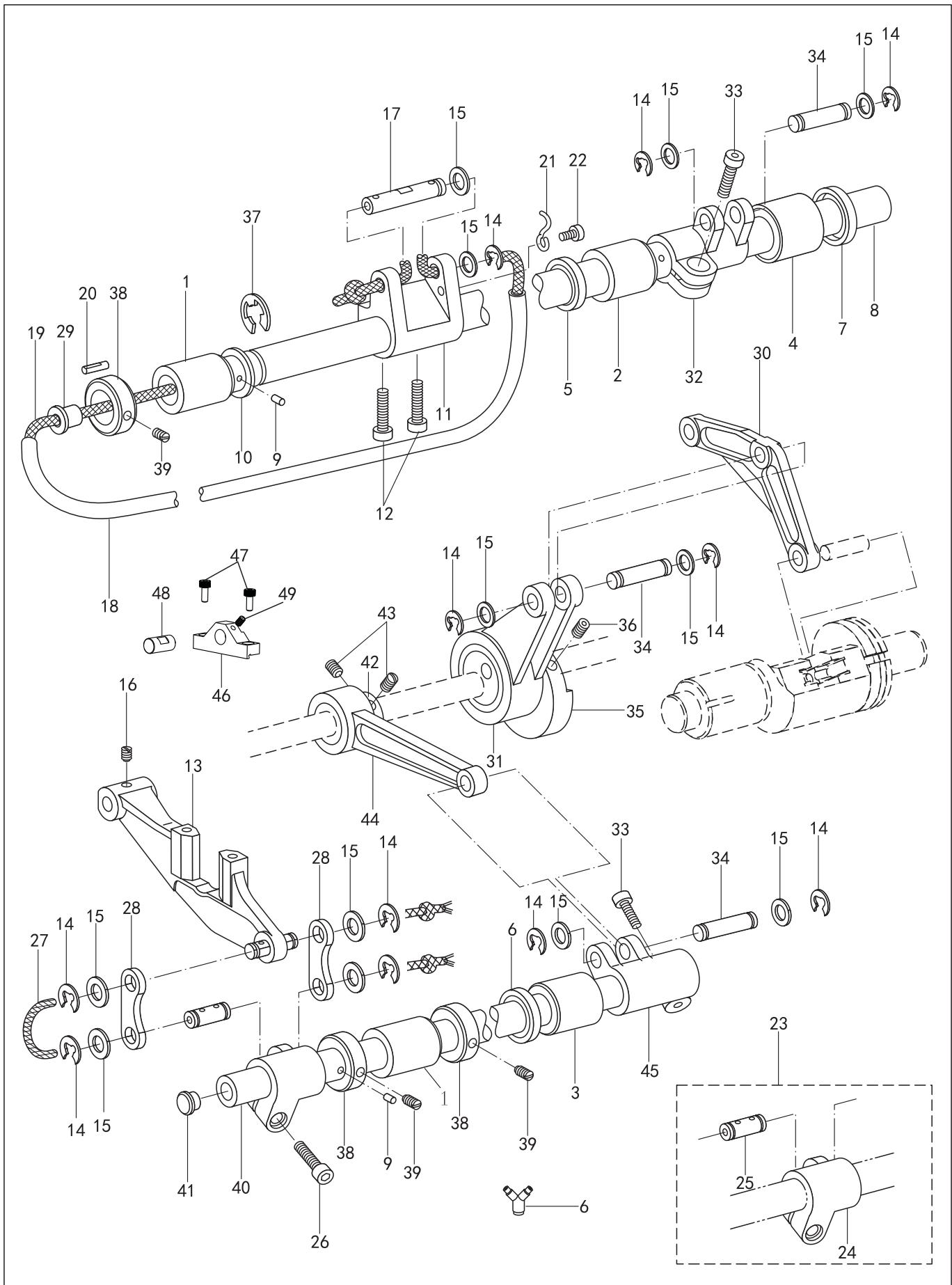
15. Upper feed mechanism



15. Upper feed mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	93WF5-007	Bushing, F	1	1	
2	93WF11-001	Bushing, B	1	1	
3	994109	Collar	2	2	
4	93WF7-029	Set screw	2	2	
5	93WF11-002	Sponge	1	1	
6	994083	Shaft assy.	1	1	
7	93WF8-031	Bolt	1	1	
8	93WF11-003	Rubber cap	1	1	
9	994060	Connecting pin	1	1	
10	994531	Oil wick	1	1	235
11	994071	Tube guide	1	1	
12	93WF11-011	Bolt	3	3	
13	93WF11-004	Leather	1	1	
14	93WF8-036	Bolt	1	1	
15	990486	Washer	1	1	
16	994068	Connection	1	1	
17	93WF11-005	Stopper claw	4	4	
18	994063	Presser connection plate	1	1	
19	994059	Presser bar connection	2	2	
20	994060	Connection pin	3	3	
21		Oil wick	1	1	50
22		Oil tube	1	1	75
23	BS51277	Oil wick	1	1	75
24	BS51803	Felt	1	1	20
25	994082	Rubber cap	1	1	
26	994089	Oil wick	1	1	80
27	994099	Oil wick	1	1	
28	994066	Inner presser bar	1	1	
29	386WF4-012	Presser bar	1	1	
30	994065	Slide block	1	1	
31	93WF11-006	Retaining ring	2	2	
32	994064	Steady plate	1	1	
33	13WF7-015	Screw	2	2	
34	93WF13-005	Presser foot	1	-	
35	93WF13-006	Screw	1	-	
36	93WF13-011	Finger guard	1	-	

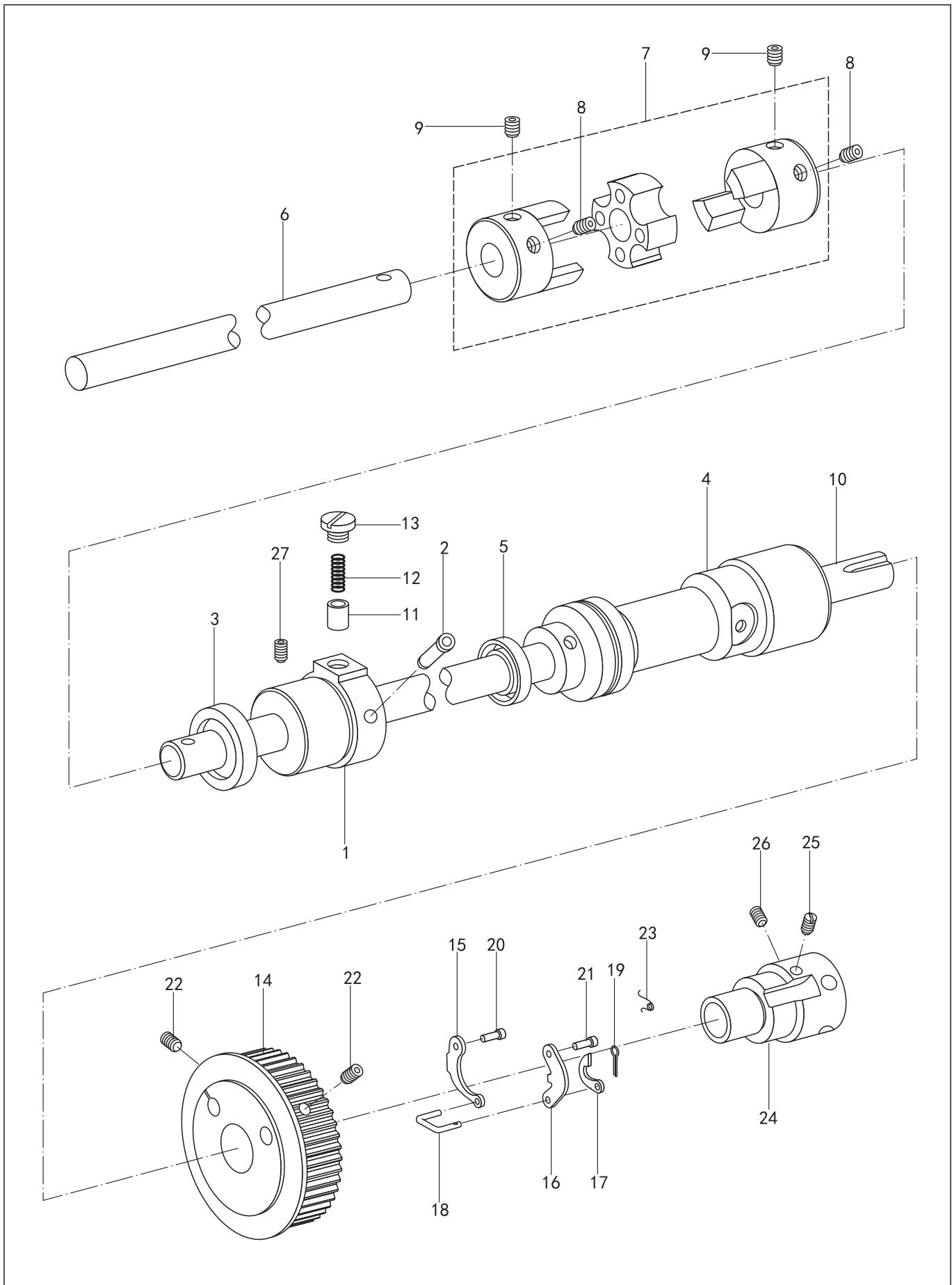
16. Feed shaft mechanism



16. Feed shaft mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	93WF5-007	Feed shaft bushing, F	2	2	
2	93WF12-001	Feed shaft bushing, M	1	1	
3	93WF12-002	Bushing, F	1	1	
4	93WF12-003	Feed shaft bushing	1	1	
5	93WF12-008	Oil seal	1	1	15×24×7
6	93WF12-008	Oil nozzle	1	1	15×24×7
7	93WF12-010	Oil seal	1	1	15×24×7
8	304WF12-001	Feed shaft	1	1	
9		Felt	2	2	
10	93WF12-004	Ring	1	1	
11	994319	Feed arm	1	1	
12	93WF10-006	Bolt	2	2	GB/T70.1 M6X20
13	994313	Feed bracket assy.	1	1	
14		Retaining ring	11	11	GB896 5
15	93WF12-005	Washer	12	12	
16	93WF12-035	Set screw	1	1	
17	994314	Pin	1	1	
18	994376	Oil tube	1	1	200
19	994315	Oil wick	1	1	300
20	0148-F	Felt	1	1	3×18
21	93WF12-006	Tube holder	1	1	
22		Bolt	1	1	GB/T 70.1 M4×6
23	994320	Feed connection arm assy.	1	1	
24	99432001	Feed connection arm	1	1	
25	99431302	Pin	1	1	
26	93WF12-019	Bolt	1	1	
27	994336	Oil wick	1	1	110
28	994321	Feed link assy.	2	2	
29	994082	Rubber cap	1	1	
30	994346	Back cylinder connection	1	1	
31	994342	Connection rod assy., L-feed	1	1	
32	994318	Feed shaft arm	1	1	
33	93WF7-012	Bolt	2	2	
34	994341	Pin	3	3	
35	994340	Lower feed cam	1	1	
36	93WF1-027	Set screw	2	2	
37	93WF12-007	Retaining ring	1	1	
38	994109	Collar, adjust shaft	3	3	
39	93WF7-029	Set screw	3	3	
40	994322	Adjust-shaft	1	1	
41	93WF11-003	Rubber cap	1	1	
42	211WF3-011	Feed cam	1	1	
43	93WF2-008	Set screw	2	2	
44	994339	Feed rod	1	1	
45	994318	Feed shaft arm	1	1	
46	386WF4-008	Bracket	1	1	
47	18WF3-021	Screw	2	2	
48	386WF4-007	Pin	1	1	
49	123WF3-094	Screw	1	1	

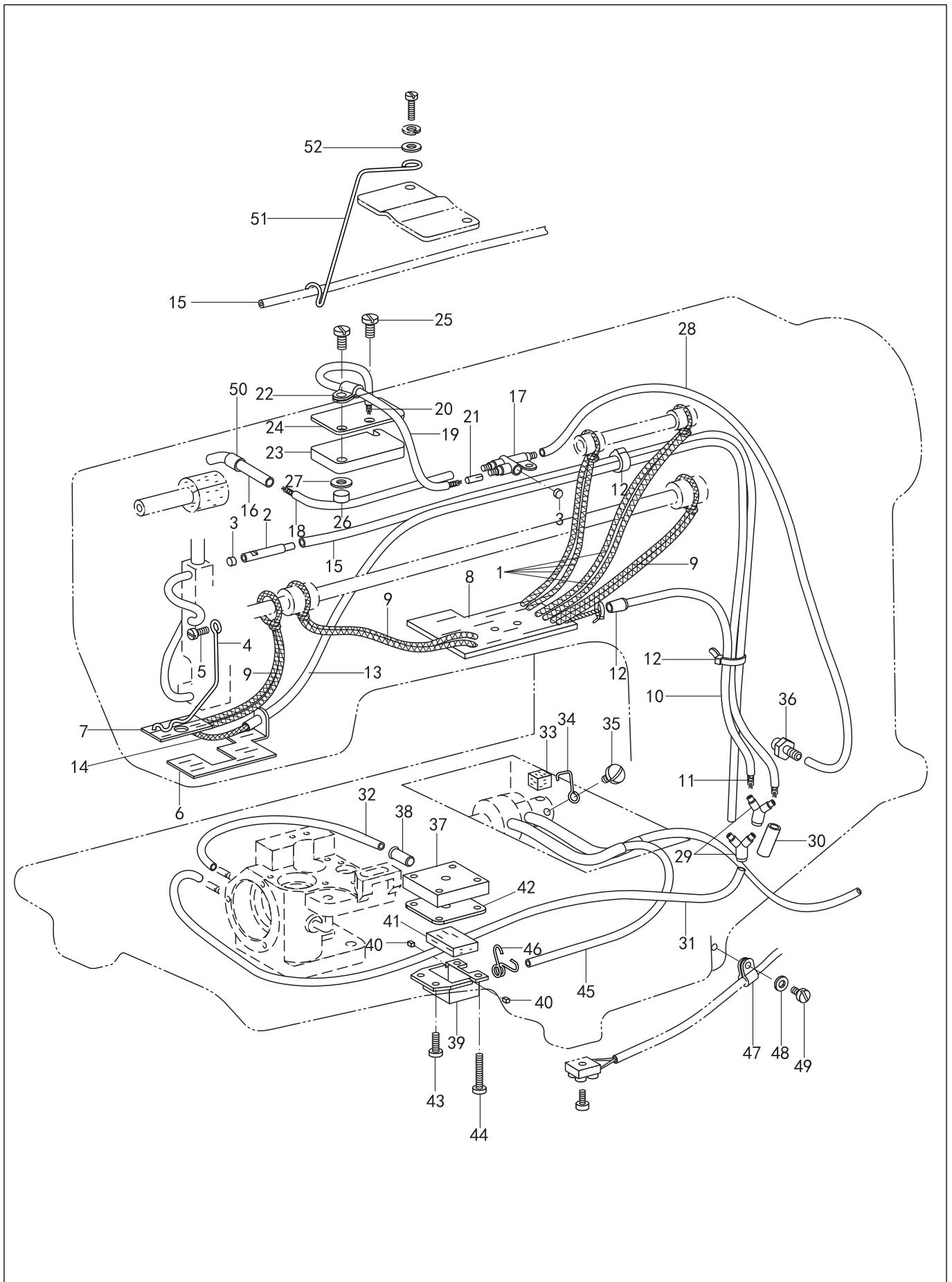
17. Lower shaft mechanism



17. Lower shaft mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	93WF15-006A	Bushing, F; L-shaft	1	1	
2	93WF3-001	Pipe	3	3	
3	93WF15-007	Oil seal	1	1	12×30×7
4	93WF15-008	Bushing, B; L-shaft	1	1	
5	93WF15-009	Oil seal	1	1	12×22×7
6	304WF15-001	Lower shaft	1	1	
7	93WF15-001	Lower shaft coupling assy	1	1	
8	93WF15-011	Screw	2	2	
9	93WF15-012	Screw	2	2	
10	93WF15-013A	Lower shaft, B	1	1	
11	93WF15-002	Plunge	2	2	
12	93WF15-003	Spring, compression	2	2	
13	93WF15-004	Screw	2	2	
14	213WF-014	Belt pulley assy, Lower	1	1	
15	22WF1-013	Spring, lock lever	1	1	
16	22WF1-018	Lock lever	1	1	
17	22WF1-016	Ratchet	1	1	
18	22WF1-017	Connecting link	1	1	
19		Pin	1	1	GB/T 91 1.2×8
20	22WF1-015	Lock lever shaft	1	1	
21	22WF1-019	Shaft, spring	1	1	
22	93WF8-015	Set screw	2	2	
23	22WF1-014	Spring	1	1	
24	93WF15-015	Bushing	1	1	
25	93WF15-016	Set screw	1	1	
26	93WF15-017	Set screw	1	1	
27	93WF2-015	Set screw	1	1	

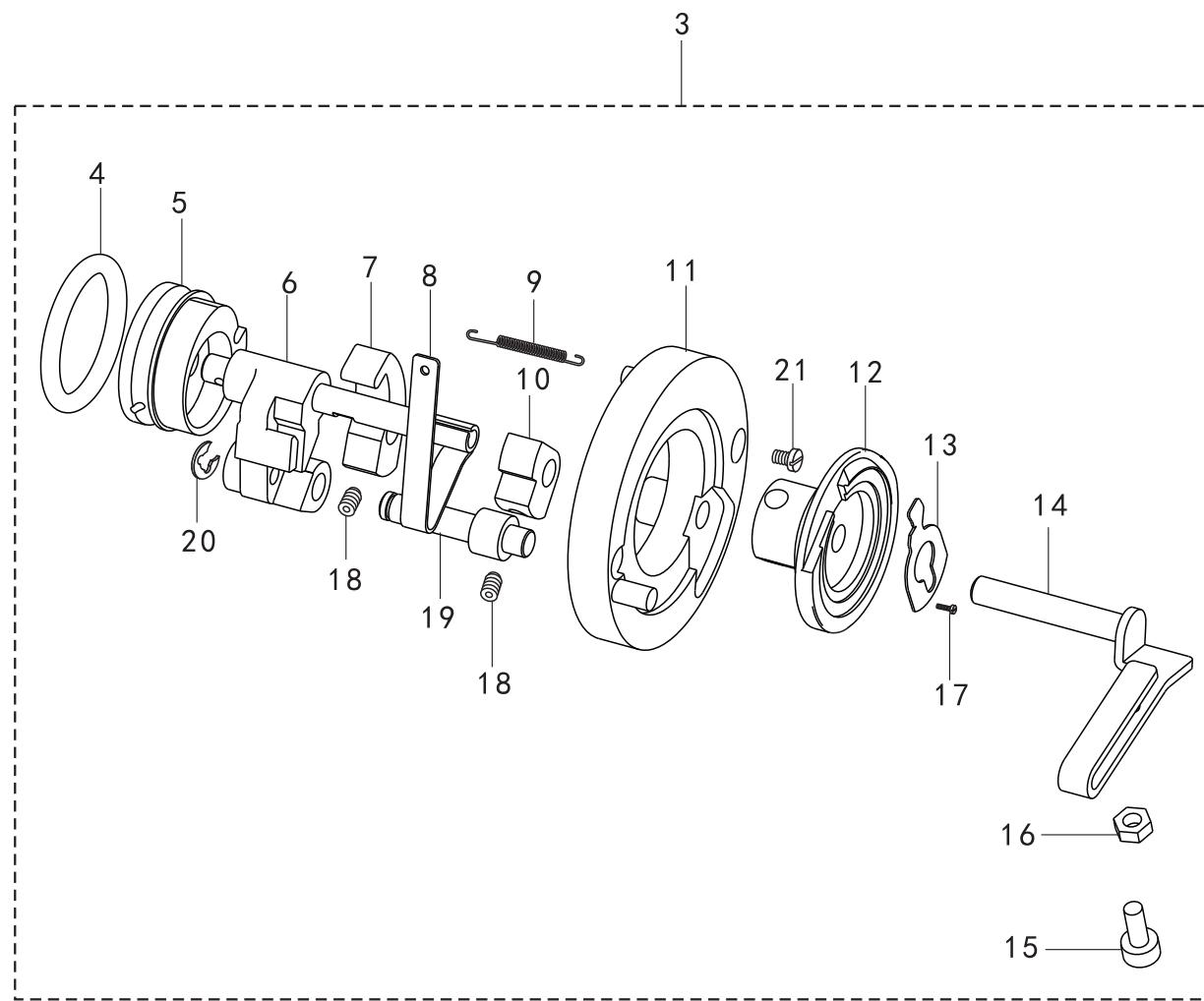
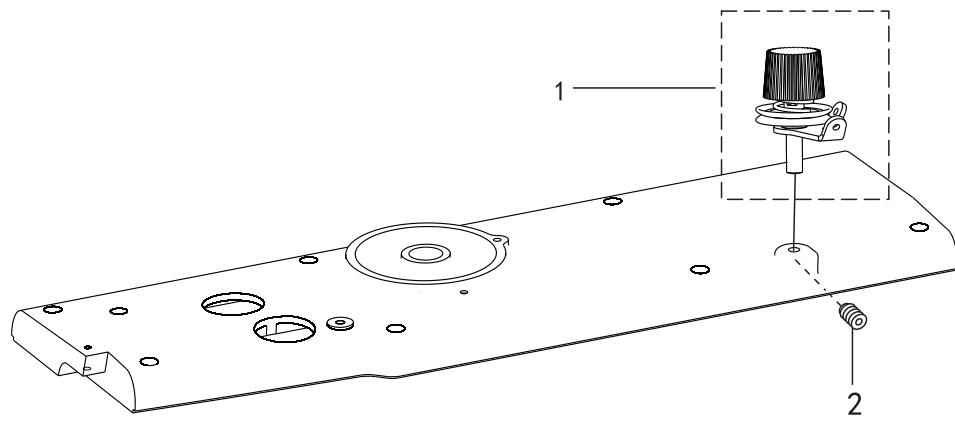
18. Lubrication mechanism



18. Lubrication mechanism

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1		Oil wick	2	2	
2	93WF16-018	Oil tube	1	1	
3	93WF14-006	Rubber cap, 4.2mm	1	1	
4	93WF16-019	Oil wick support	1	1	
5	93WF8-037	Bolt	1	1	
6	93WF16-001	Felt	1	1	
7	93WF16-002	Felt	1	1	
8	93WF16-003	Felt	1	1	
9		Oil wick	3	3	400
10		Oil tube	1	1	200
11		Oil wick	1	1	250
12		Tube tie	3	3	3×110
13		Oil tube	1	1	490
14		Oil wick	1	1	620
15		Oil tube	1	1	480
16	93WF16-004	Pipe	1	1	
17	21WF7-016	Joint	1	1	
18		Oil tube	1	1	185
19		Oil tube	1	1	150
20		Oil wick	1	1	220
21		Felt	1	1	3×25
22	93WF16-021	Tube clamp	1	1	
23	93WF16-005	Felt	1	1	
24	93WF16-026	Felt support	1	1	
25	13WF7-015	Screw	1	1	
26	93WF16-006	Collar	1	1	
27	375290	Washer	1	1	
28		Oil tube	1	1	380
29	93WF16-007	Y-joint	2	2	
30		Oil tube	1	1	40
31		Oil tube	1	1	400
32		Oil tube	1	1	190
33	93WF16-008	Sponge	1	1	
34	93WF16-009	Sponge support	1	1	
35	999055	Screw	1	1	
36	93WF16-010	Oil feed pipe	1	1	
37	93WF16-024	Plate, filter bracket	1	1	
38	93WF1-017	Pipe	2	2	
39	93WF16-011	Sub-tank	1	1	
40	93WF16-012	Rubber cap	2	2	
41	93WF16-013	Felt	1	1	
42	93WF16-014	Packing	1	1	
43	33T3-007	Screw	3	3	
44	93WF16-015	Screw	2	2	
45		Oil tube	1	1	450
46	21WF7-006	Tube clip	1	1	
47	93WF16-016	Cushion clamp	1	1	
48	93WF1-009	Washer	1	1	
49	93WF16-025	Screw	1	1	
50		Oil tube	1	1	5
51	93WF16-017	Tube support	1	1	
52		Washer	1	1	GB/T 97.1 4

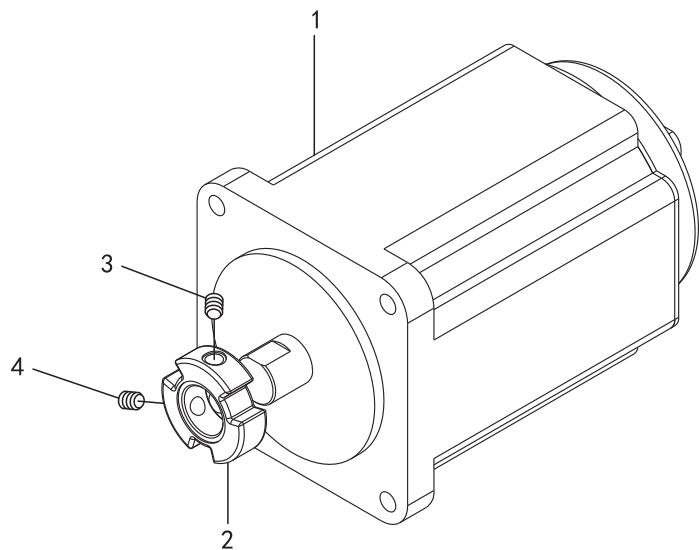
19. Bobbin winder mechanism



19. Bobbin winder mechanism

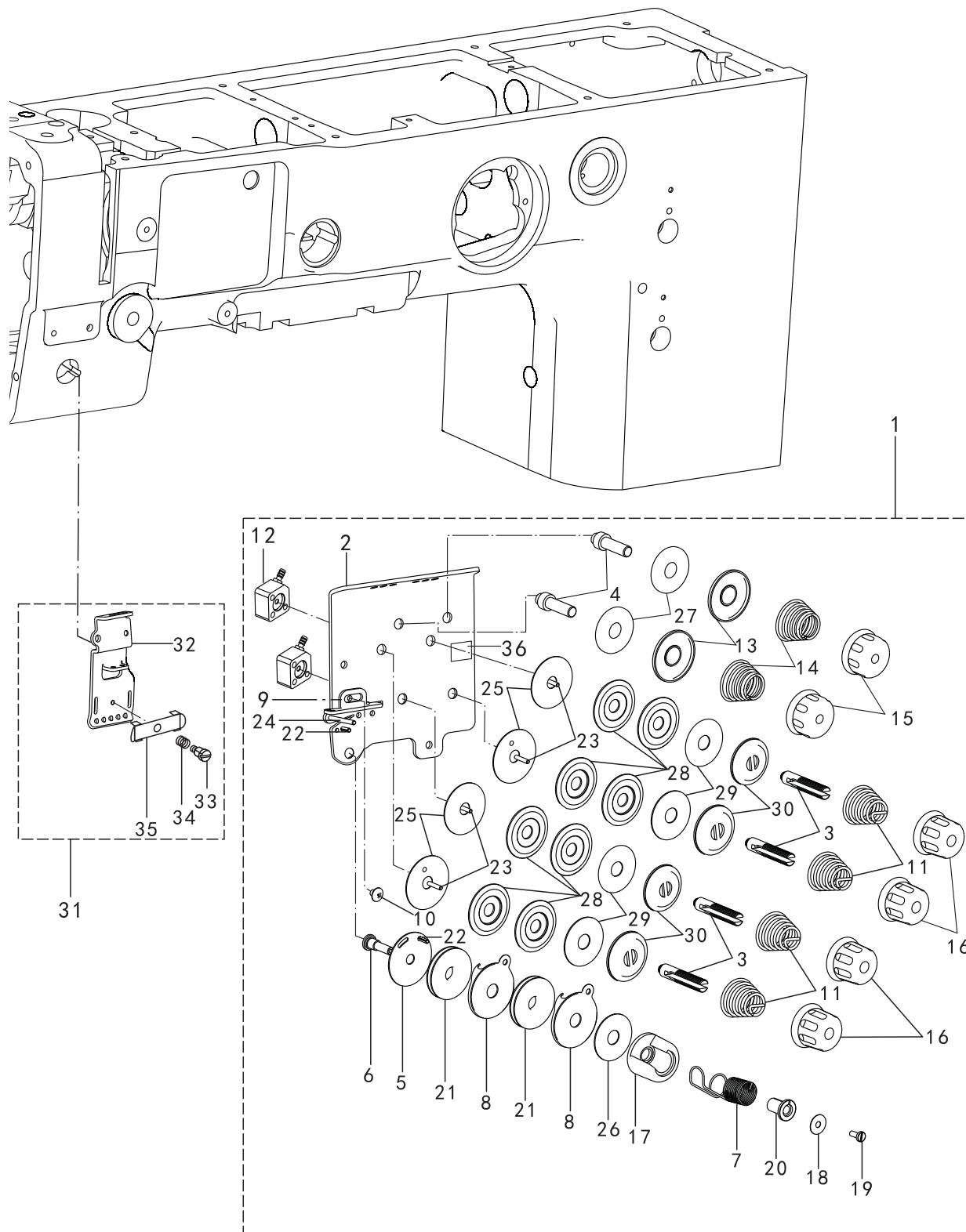
NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	447WF1-005	Thread tension complete	1	1	
2	93WF17-012	Screw	1	1	
3	394WF17-001	Bobbin winder assy.	1	1	
4	394WF17-001A	Rubber ring	1	1	
5	394WF17-001B	Roller base	1	1	
6	394WF17-001C	Crank	1	1	
7	394WF17-001D	Crank	1	1	
8	394WF17-001E	Spring	1	1	
9	394WF17-001F	Spring	1	1	
10	394WF17-001G	Crank	1	1	
11	394WF17-001H	Winder base	1	1	
12	394WF17-001I	Bobbin base	1	1	
13	394WF17-001J	Knife	1	1	
14	394WF17-001K	Shaft	1	1	
15	394WF17-001L	Nut	1	1	
16	394WF17-001M	Screw	1	1	
17	394WF17-001N	Screw	1	1	
18	394WF17-001O	Screw	2	2	
19	394WF17-001P	Pin	1	1	
20	394WF17-001Q	Spring	1	1	
21		Screw	2	2	GB/T 823 M4X10

20. Motor mechanism



NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	394WF2-003	Motor	1	1	
2	394WF2-001B	Coupling assy.	1	1	
3	394WF2-006	Screw	1	1	
4	93WF15-012	Screw	1	1	

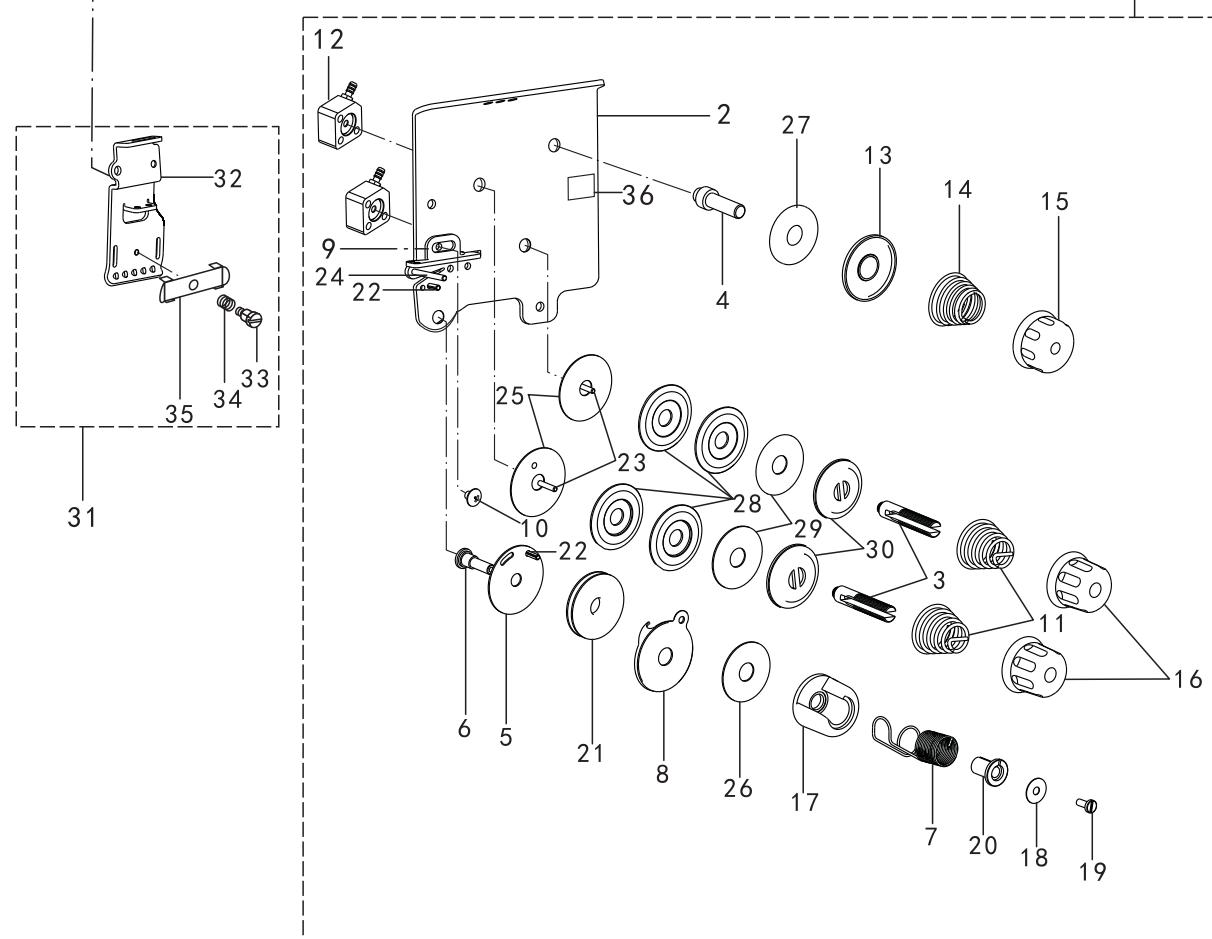
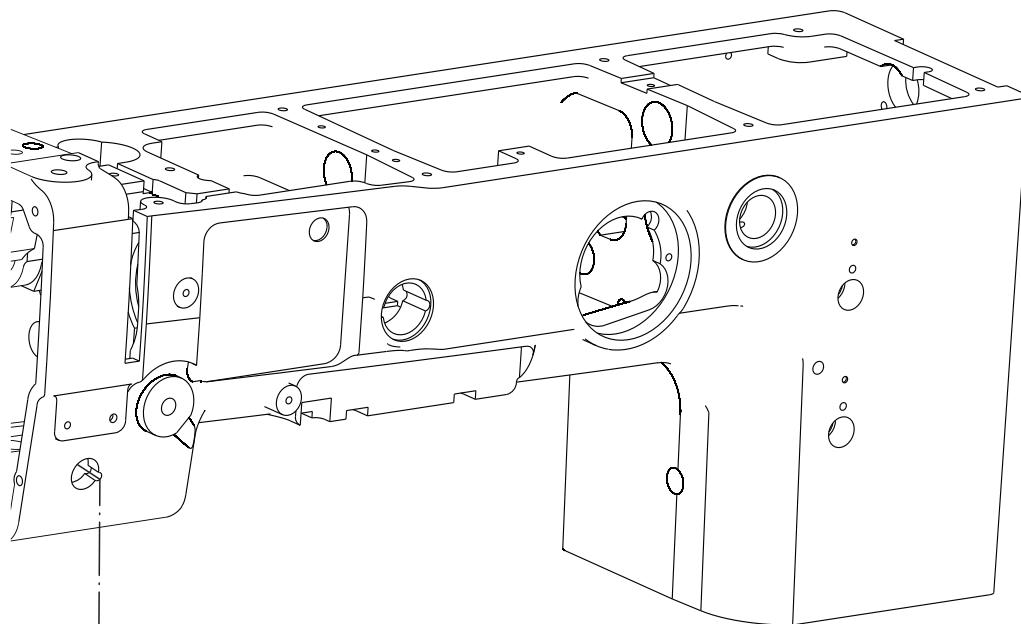
21. Thread tension mechanism (2-needle machine)



21. Thread tension mechanism (2-needle machine)

NO.	PARTS NO.	PARTS NAME	QTY	REMARK
			24676L4D2T5	
1	458WF20-001	Thread tension complete	1	
2	458WF20-001A	Tension bracket	1	
3	394WF20-001B	Tension screw shaft	4	
4	394WF20-001C	Pretension screw shaft	2	
5	394WF20-001D	Disc	1	
6	394WF20-001E	Screw bar	1	
7	458WF20-001B	Thread take up spring	1	
8	394WF20-001G	Tension controller	2	
9	411WF20-004	Thread guide	1	
10	394WF20-001H	Screw	1	G 818 M4×5
11	411WF20-005	Tension spring	4	
12	444WF2-002B	Cylinder	4	ACQ10×1.5
13	394WF20-001I	Tension disc	4	
14	394WF20-001J	Tension spring	2	
15	394WF20-001K	Nut	2	
16	394WF20-001L	Nut	4	
17	394WF20-001M	Spring controller	1	
18	394WF20-001N	Washer	1	
19	394WF20-001O	Screw	1	
20	394WF20-001P	Bush	1	
21	394WF20-001Q	Roller	2	
22	394WF20-001R	Pin	1	
23	394WF20-001S	Tension release pin	4	
24	394WF20-001T	Pin	1	
25	394WF20-001U	Washer	4	
26	394WF20-001V	Washer	1	
27	394WF20-001W	Washer	2	
28	394WF20-001X	Tension disc	8	
29	394WF20-001Y	Washer	4	
30	394WF20-001Z	Tension release disc	4	
31	200WF20-004	Thread guide assy.	1	
32	200WF20-004A	Thread guide	1	
33	92WF2-015D	Screw	1	
34	92WF2-015C	Spring	1	
35	92WF2-015B	Tension plate	1	
36	458WF1-001	Label	1	

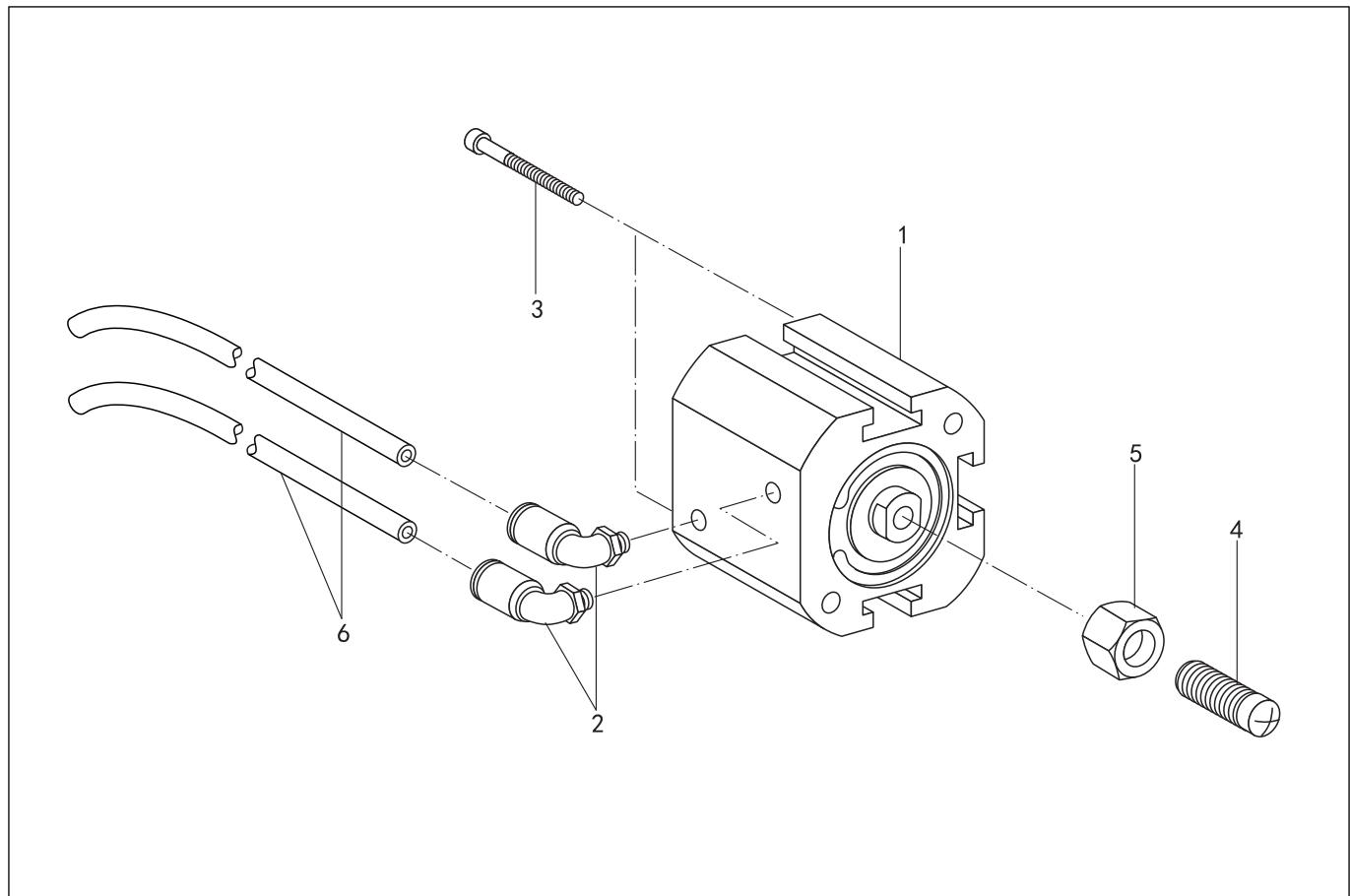
22. Thread tension mechanism(1-needle machine)



22. Thread tension mechanism(1-needle machine)

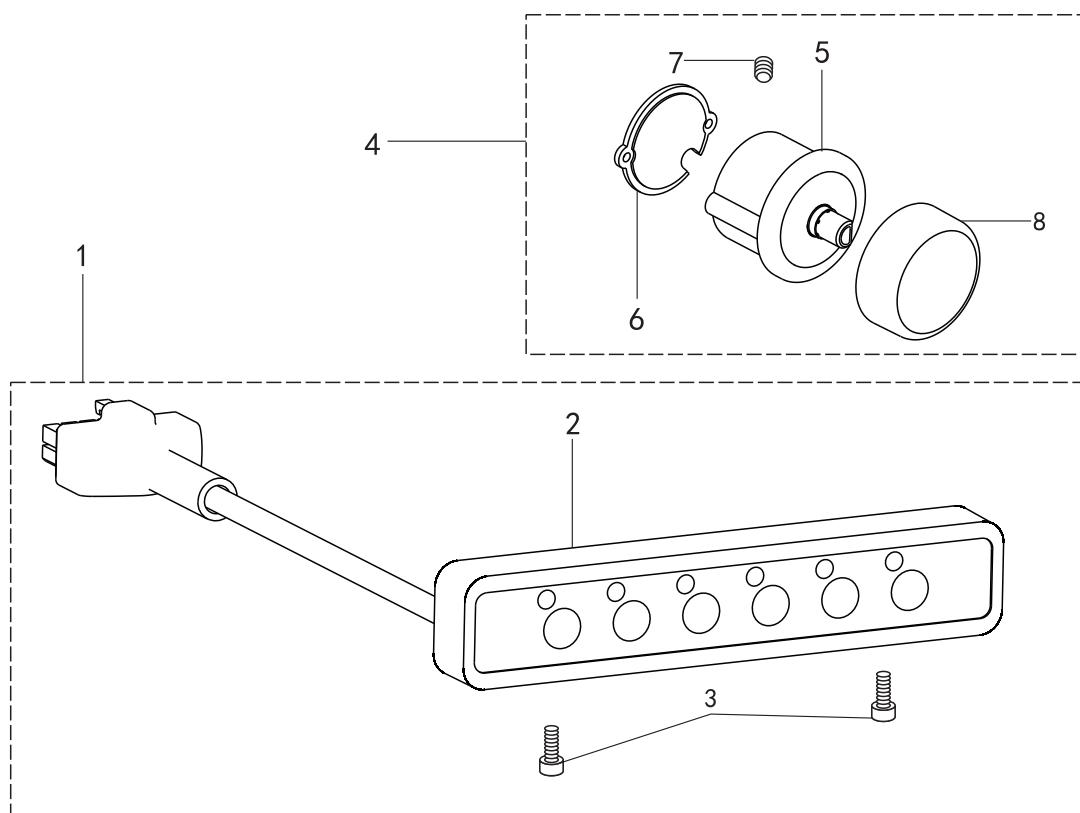
NO.	PARTS NO.	PARTS NAME	QTY	REMARK
			24677L14D2T5	
1	394WF20-001	Thread tension complete	1	
2	394WF20-001A	Tension bracket	1	
3	394WF20-001B	Tension screw shaft	2	
4	394WF20-001C	Pretension screw shaft	1	
5	394WF20-001D	Disc	1	
6	394WF20-001E	Screw bar	1	
7	394WF20-001F	Thread take up spring	1	
8	394WF20-001G	Tension controller	1	
9	411WF20-004	Thread guide	1	
10	394WF20-001H	Screw	1	GB818 M4×5
11	411WF20-005	Tension spring	2	
12	444WF2-002B	Cylinder	2	ACQ10×1.5
13	394WF20-001I	Tension disc	2	
14	394WF20-001J	Tension spring	1	
15	394WF20-001K	Nut	1	
16	394WF20-001L	Nut	2	
17	394WF20-001M	Spring controller	1	
18	394WF20-001N	Washer	1	
19	394WF20-001O	Screw	1	
20	394WF20-001P	Bush	1	
21	394WF20-001Q	Roller	1	
22	394WF20-001R	Pin	1	
23	394WF20-001S	Tension release pin	2	
24	394WF20-001T	Pin	1	
25	394WF20-001U	Washer	2	
26	394WF20-001V	Washer	1	
27	394WF20-001W	Washer	1	
28	394WF20-001X	Tension disc	4	
29	394WF20-001Y	Washer	2	
30	394WF20-001Z	Tension release disc	2	
31	200WF20-004	Thread guide assy.	1	
32	200WF20-004A	Thread guide	1	
33	92WF2-015D	Screw	1	
34	92WF2-015C	Spring	1	
35	92WF2-015B	Tension plate	1	
36	411WF1-007	Label	1	

23. Air presser lifter mechanism



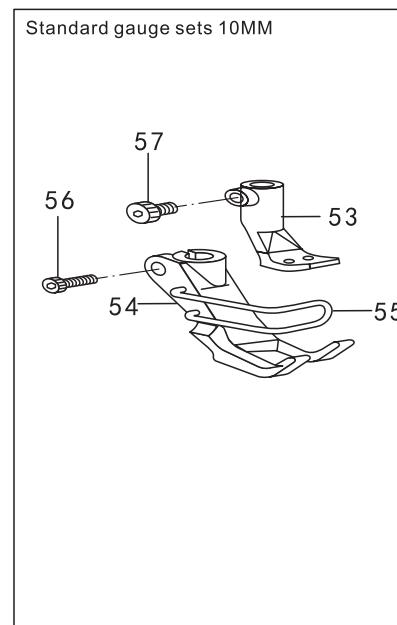
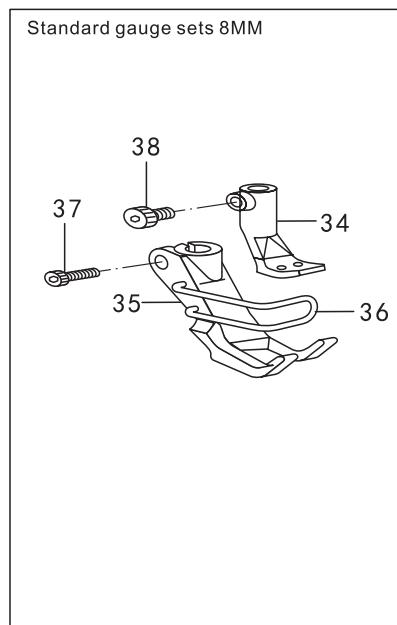
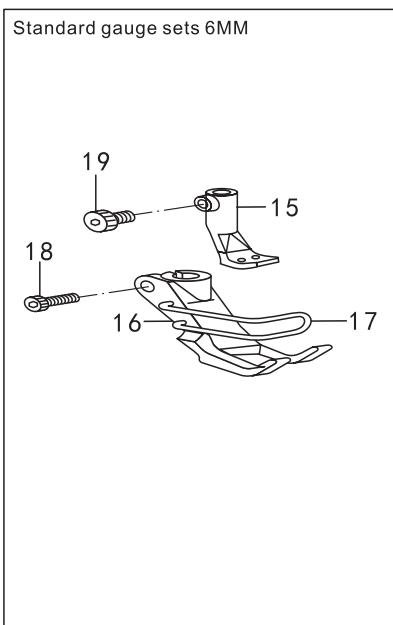
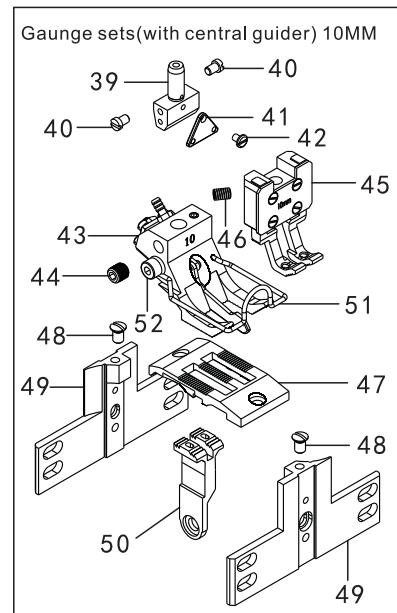
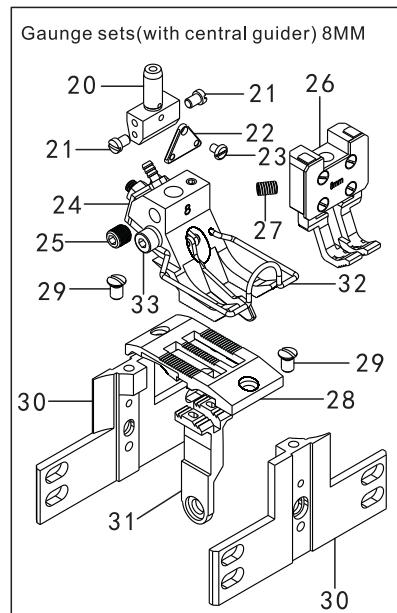
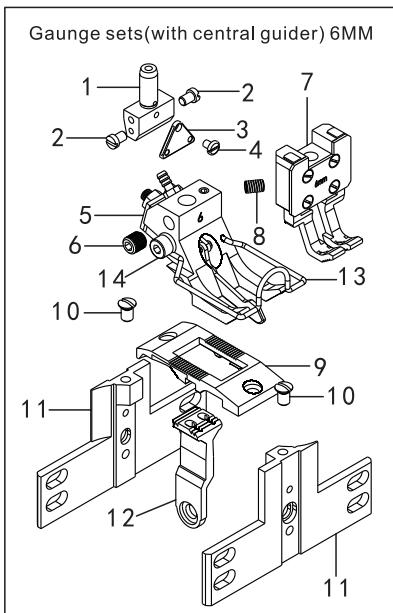
NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	93WF23-001	Cylinder	1	1	SU239 32×20
2	93WF23-002	Joint	2	2	APL4
3		Screw	2	2	GB/T 70.1 M5×45
4	93WF23-004	Screw	1	1	
5		Nut	1	1	GB/T 6172.1 M8
6	214WF-008	Air tube	2	2	870mm

24. Manual switch mechanism



NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	394WF21-001	Switch assy.	1	1	
2	394WF21-001A	Switch setting body	1	1	GB/T 67 M4X8
3		Screw	2	2	
4	394WF21-002	Electric handwheel assy.	1	1	
5	394WF21-002a	Electric handwheel	1	1	
6	394WF21-002b	Back cover	1	1	
7	93WF17-012	Screw	1	1	
8	559039515	Dial	1	1	

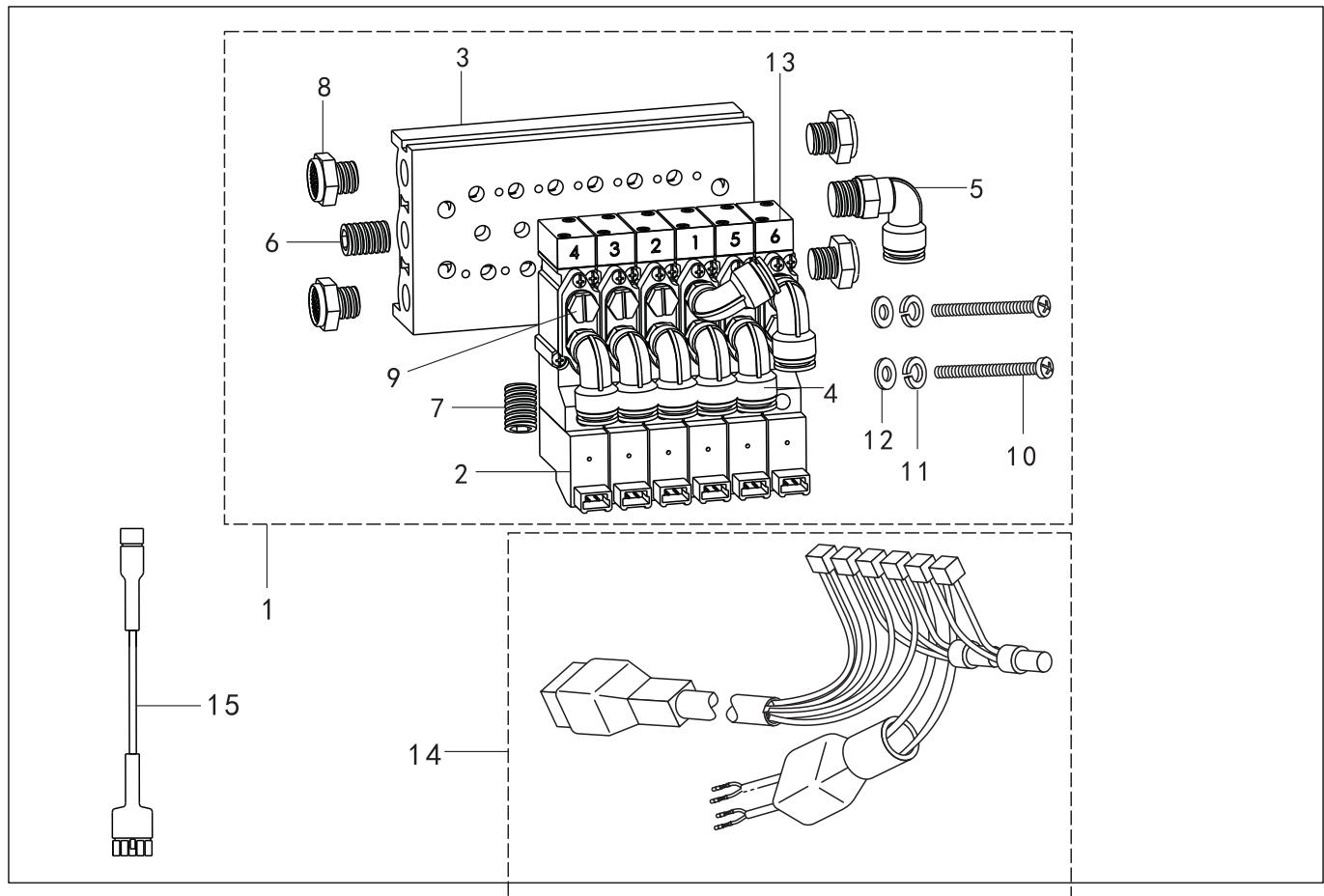
25. Needle plate, presser foot components (2-needle)



25. Needle plate, presser foot components (2-needle)

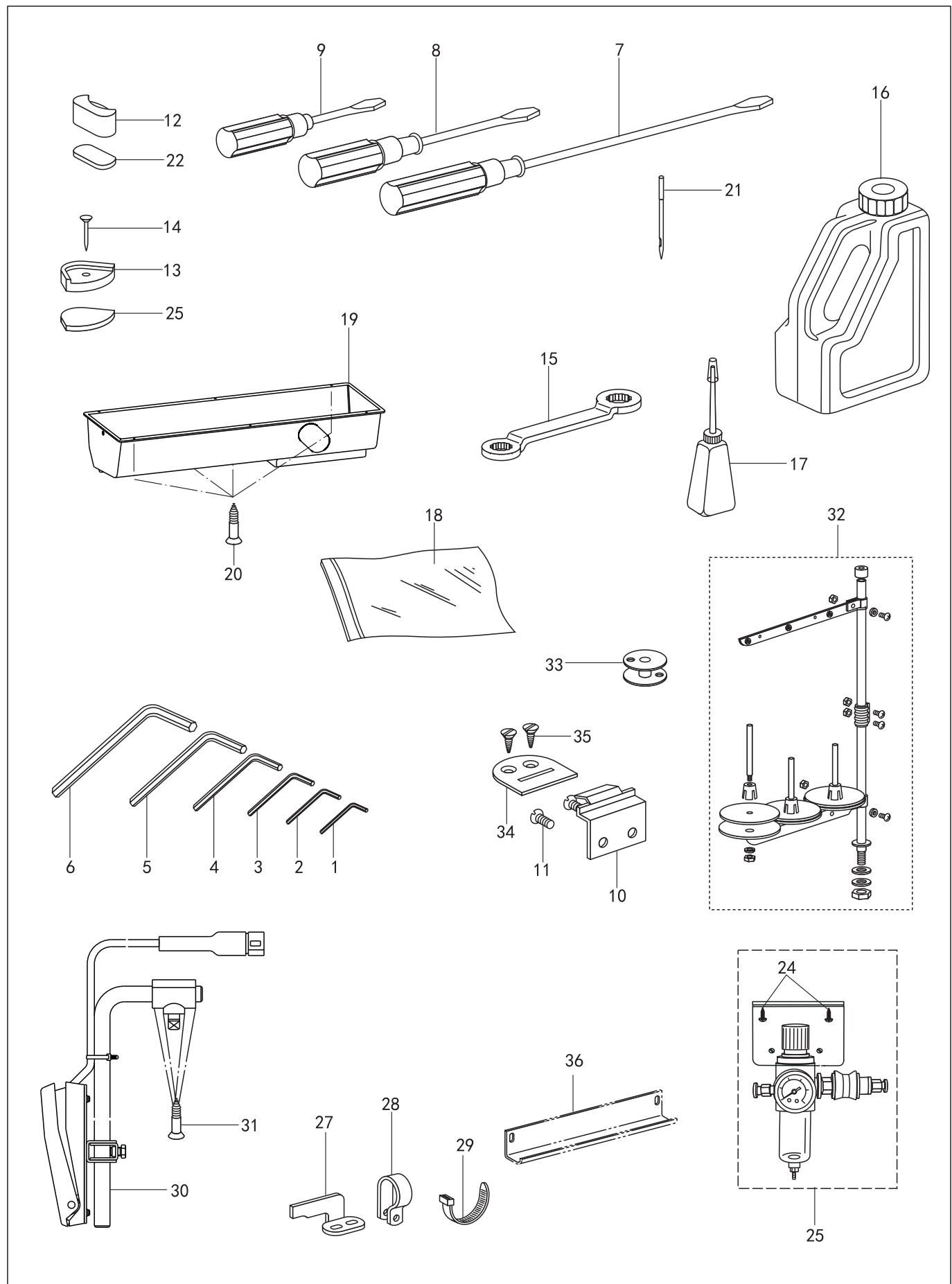
NO.	PARTS NO.	PARTS NAME	QTY	REMARK
			24676L14D2T5	
1	193WF13-001c	Needle clamp	1	
2	17WF2-037	Screw	2	
3	193WF5-002a	Thread guide	1	
4	16WF1-006	Screw	1	
5	386WF5-005	Presser foot with guider	1	
6	57WF-009	Screw	1	
7	386WF4-021	Compensative foot	1	
8	123WF3-094	Screw	1	
9	386WF2-006D	Needle plate	1	
10	386WF2-007	Screw	2	
11	386WF2-010A	Support plate	2	
12	386WF4-001D	Feed dog	1	
13	218WF13-009	Finger guard	1	
14	13WF2-040	Screw	1	
15	193WF13-001c	Walking foot(6mm)	1	
16	193WF13-002b	Presser foot (6mm)	1	
17	193WF13-006a	Finger guard	1	
18	93WF13-006	Screw	1	
19	93WF13-004	Screw	1	
20	193WF5-001d	Needle clamp	1	
21	17WF2-037	Screw	2	
22	193WF5-002a	Thread guide	1	
23	16WF1-006	Screw	1	
24	218WF13-007	Presser foot with guider	1	
25	57WF-009	Screw	1	
26	218WF13-006	Compensative foot	1	
27	123WF4-021	Screw	1	
28	386WF2-006B	Needle plate	1	
29	386WF2-007	Screw	2	
30	386WF2-010B	Support plate	2	
31	386WF4-001B	Feed dog	1	
32	218WF13-010	Finger guard	1	
33	13WF2-040	Screw	1	
34	193WF13-001d	Walking foot(8mm)	1	
35	193WF13-002c	Presser foot (8mm)	1	
36	193WF13-006b	Finger guard	1	
37	93WF13-006	Screw	1	
38	93WF13-004	Screw	1	
39	193WF5-001e	Needle clamp	1	
40	17WF2-037	Screw	2	
41	193WF5-002b	Thread guide	1	
42	16WF1-006	Screw	1	
43	28WF13-005	Presser foot with guider	1	
44	57WF-009	Screw	1	
45	218WF13-004	Compensative foot	1	
46	123WF3-094	Screw	1	
47	386WF2-006c	Needle plate	1	
48	386WF2-007	Screw	2	
49	386WF2-010c	Support plate	2	
50	386WF4-001c	Feed dog	1	
51	218WF13-011	Finger guard	1	
52	13WF2-040	Screw	1	
53	193WF13-002c	Walking foot (10mm)	1	
54	193WF13-002c	Presser foot (10mm)	1	
55	193WF13-006b	Finger guard	1	
56	93WF13-006	Screw	1	
57	93WF13-004	Screw	1	

26. Air presser mechanism (with central guider)



NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	394WF22-001	Solenoid valve assy.	1	1	KV110-4P
2	394WF22-002	Solenoid valve	6	6	MK100B-06
3	394WF22-003	Air manifold	1	1	PL4-M5T
4	394WF22-004	Joint	7	7	PC6-01T
5	394WF22-005	Joint	1	1	1/8 BST-01
6	394WF22-006	End cap	1	1	
7	394WF22-007	Silencer	1	1	LP-M5
8	394WF22-011	Silencer	4	4	GB/T818 M4X30
9	394WF22-008	End cap	5	5	GB 859 4
10		Screw	2	2	GB/T97.1-4
11		Washer, spring	2	2	
12		Washer	2	2	
13	411WF22-001	Label	1	1	
14	394WF22-010	Wire assy.	1	1	
15	385WF5-010	Transfer wire for knee switch	1	1	

27. Accessories



27. Accessories

NO.	PARTS NO.	PARTS NAME	QTY		REMARK
			24677L14D2T5	24676L14D2T5	
1	91WF6-006	Hexagonal wrench	1	1	S=1.5
2		Hexagonal wrench	1	1	2 GB/T5356-1998
3		Hexagonal wrench	1	1	2.5 GB/T5356-1998
4		Hexagonal wrench	1	1	3 GB/T5356-1998
5		Hexagonal wrench	1	1	4 GB/T5356-1998
6	33TF-012	Hexagonal wrench	1	1	5 GB/T5356-1998
7		Screw driver, L	1	1	
8		Screw driver, M	1	1	
9		Screw driver, S	1	1	
10		Hinge	2	2	
11	211WF5-001	Screw	4	4	
12		Rubber cushion(B)	2	2	
13		Rubber cushion (S)	2	2	
14		Nail	2	2	SG162
15		Double wrench	1	1	8×10 GB/T4388-1995
16	1F-009	Oil tank	1	1	
17		Oiler	1	1	
18		Accessories bag	1	1	
19		Oil pan	1	1	
20		Wooden screw	6	6	GB 100 3.5×12
21	93WF24-004	Needle	4	8	DP×17 19#
22		Spacer	2	2	
23		Spacer	2	2	
24		Screw	2	2	
25		Air filter integrator assy.	1	1	
27	93WF19-002	Fixed knife	1	1	
28		Clamp	1	1	SM11/64"×28/8
29		Band	1	1	4x200
30		Knee switch assy.	1	1	
31		Screw	4	4	GB846 ST4.2x16
32	89F-001	Thread stand assy.	-	1	
		Thread stand assy.	1	-	
33		Bobbin	3	6	
34		Hinge (2)	2	2	
35		Wooden screw	4	4	
36	411WF1-008	Cover	1	1	

YSC-8361

AC Servo System

Instruction manual

Software version:V1.04

Dec. 19, 2017

IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

YSC-8361 controller is used for an industrial sewing machine. With industrial sewing machine, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up, and consequently there is always a danger of injury that can be caused by these parts. So when you ready to operate the machine, please follow the instructions from trained personnel and instructors regarding safe and correct operation.

1. NOTICE

1.1 Work environment

- ▲ Please use 220V AC in ±10% ranges.
- ▲ To avoid the false operate, please keep the product away from the high electromagnetic interference.
- ▲ Please operate in the area which temperature is 5 °C ~45 °C and humidity is 80% or less.

1.2 Notice of installation

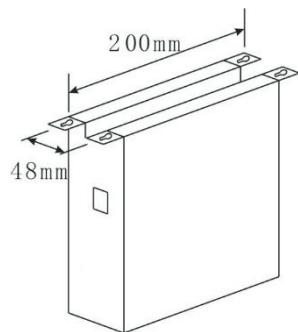
- ▲ Turn off the power and unplug the cord before installation.
- ▲ The wire must not set to be near the wheel and other movable parts.
- ▲ To avoid the static interference and current leakage, all grounding must be done.

1.3 Notice of safety

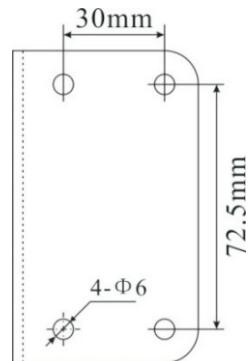
- ▲ Turn off the power before maintenance and repairs or raising the machine arms, or changing needle, or threading needle.
- ▲ Please don't open the box except the professional.
- ▲ When turn on the machine in the first time, use low speed to operate and check the correct rotation direction.
- ▲ During machine operation, don't touch any moving parts.
- ▲ All moving parts must use the protective device to avoid the body contact and objects insertion.
- ▲ When there is water or other liquid, or caustic material on box or motor, you must stop operation and turn off the power.
- ▲ All connector shouldn't be plug and unplug when power on.
- ▲ The connector should be plug and unplug in the correct method.

2. INSTALLATION AND ADJUSTMENT

2.1 Dimension of control box and speed controller bracket(direct driven)



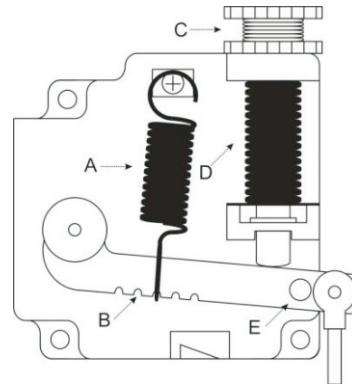
Control box



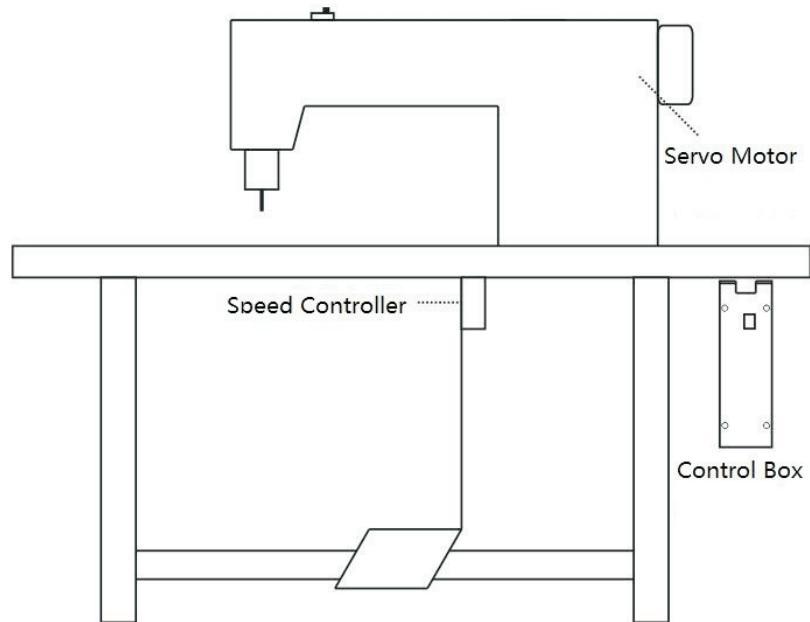
Speed controller bracket

2.2 Speed controller

- A: Forward spring
- B: Groove
- C: Bolt group
- D: Back spring
- E: Pothook hole



2.3 Installation diagram of system



3. ELECTRICAL CONNECTION

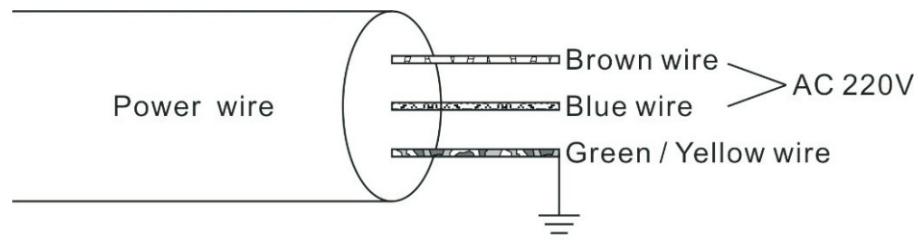
3.1 Connecting the power supply

Work on the electrical equipment may only be performed by qualified technicians or personal who have undergone the necessary training.

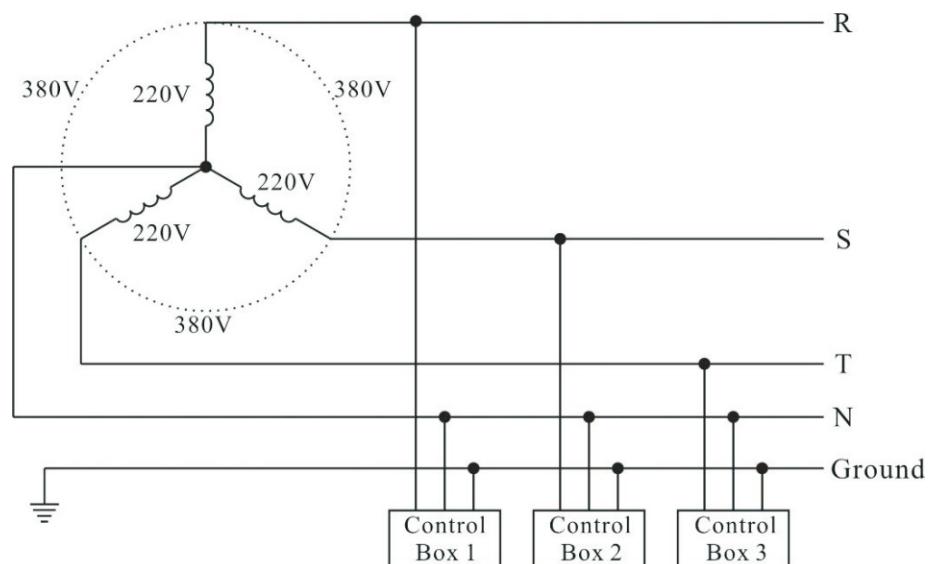
Always pull the power plug before working on the electrical equipment.

Connect the control to a grounded AC voltage, the rated voltage is in the range of 220V + 10%

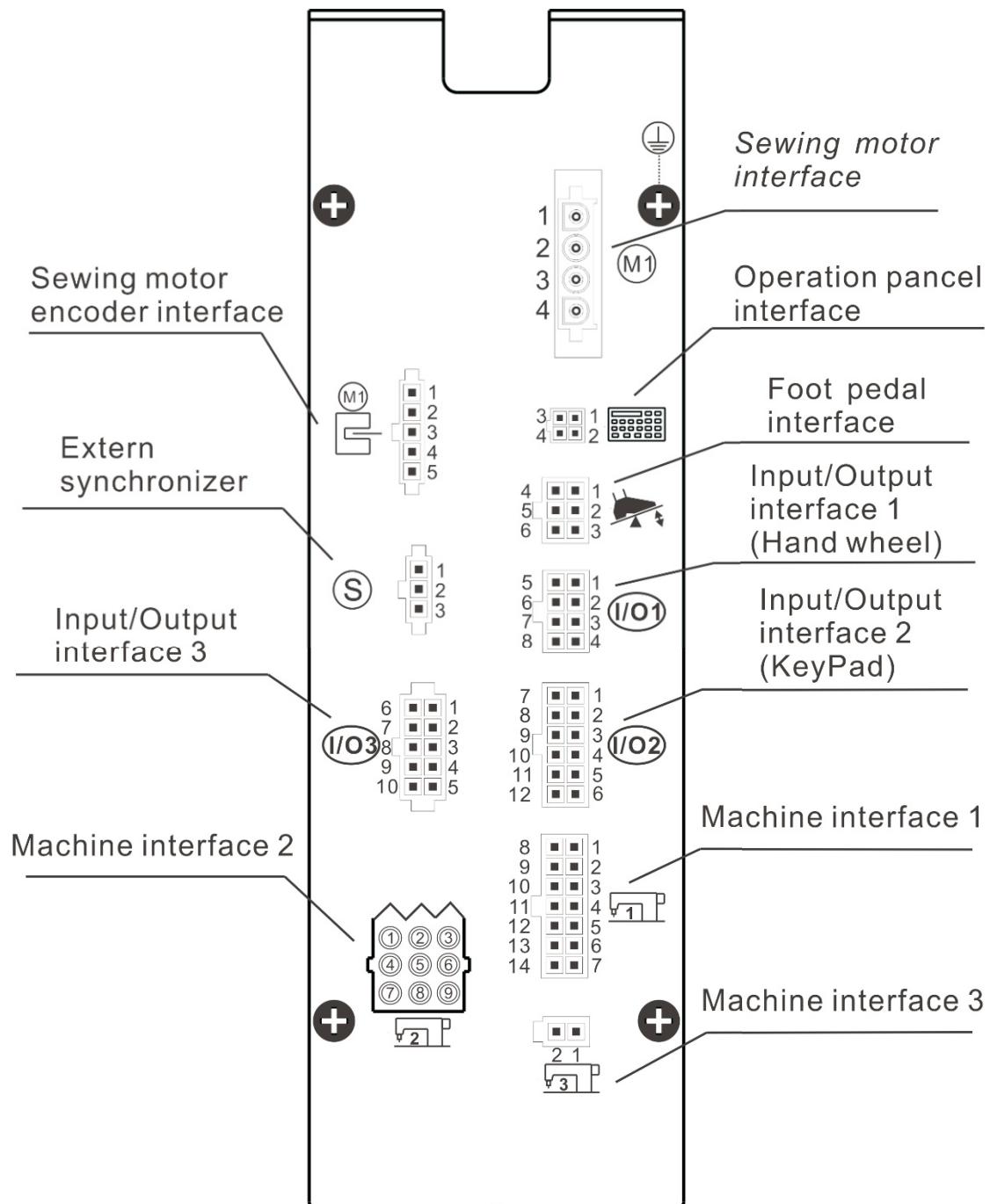
3.2 Single phase 220V power connection



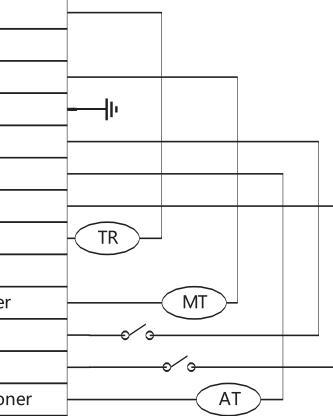
3.3 Three phase 380V power connection



4. CONNECTOR DIAGRAM



Machine Function 1		
1	DC27.5V	+27.5V
2	DC27.5V	+27.5V
3	DC27.5V	+27.5V
4	EARTH	EARTH
5	GND	GND
6	DC27.5V	+27.5V
7	GND	GND
8	DCT1	Trimmer
9	DCT3	DCT3
10	DCT5	Main tensioner
11	SW1	Safe.SW
12	SW2	Rev.SW
13	DCT2	Additional tensioner
14	VCC	14



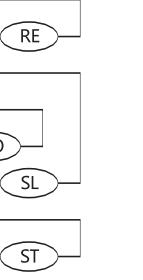
Encoder		Sewing motor	
1	DC-5V	1	EARTH
2	GNDS	2	A Phase
3	JT-UP	3	B Phase
4	MC-CHA	4	C Phase
5	MC-CHB		

Pancel	
1	VCC
2	GND
3	RXD21
4	TXD21

Keypad	
1	GND
2	GND
3	IO12-OUT
4	IO11-OUT
5	IO8-IN
6	VCC
7	IO1-IN
8	IO5-IN
9	IO4-IN
10	IO9-IN
11	IO10-OUT
12	VCC

Synchronizer	
1	VCC
2	JT-UP-A
3	GND

Machine Function 2		
1	DCT7	Reverse
2	DC27.5V	+27.5V
3	DC27.5V	+27.5V
4	DCT6	Foot
5	DC27.5V	+27.5V
6	DCT8	Stitch length
7	DC27.5V	+27.5V
8	DCT9	Stroke
9		



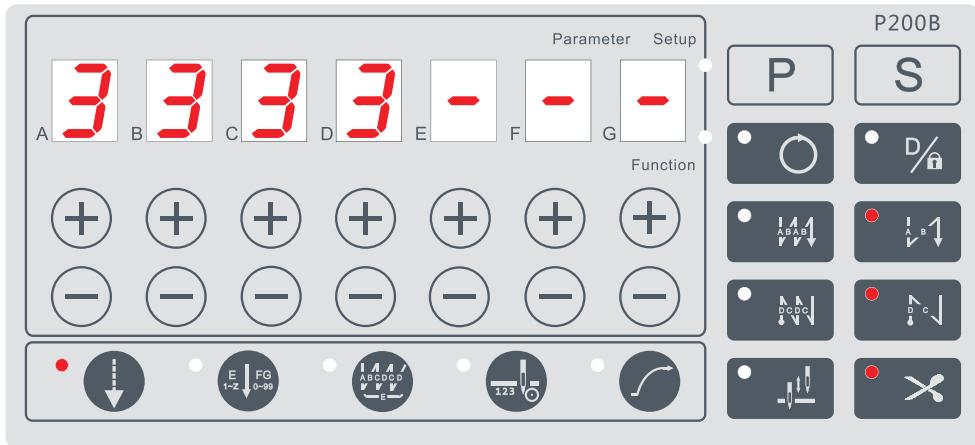
Machine Function 3		
1	DC27.5V	
2	DCT4	MD

Input/Output 3		
1	VCC	VCC
2	VCC	VCC
3	AN3-IN	Knee.SW
4	AN1-IN	FS.Speed
5	AN4-IN	AN4-IN
6	VCC	VCC
7	GND	GND
8	AN2-IN	AN2-IN
9	GND	GND
10	GND	GND

Potentiometer

Solenoid Abbreviations	
TR	Trimmer
MT	Main tensioner
AT	Additional tensioner
RE	Reverse
FO	Foot
SL	Stitch length
ST	Stroke
CL	Clamp
MD	Seam middle guide

5. OPERATING FIELD P200B



Start backtack		Single start tacking, A is the stitches of forth sewing; B is the stitches of back sewing. They are both in range 1~15
		Double start tacking, A is the stitches of forth sewing; B is the stitches of back sewing. They are both in range 1~15.
End backtack		Single end tacking, C is the stitches of back sewing; D is the stitches of forth sewing. They are both in range 1~15
		Double end tacking, C is the stitches of back sewing; D is the stitches of forth sewing. They are both in range 1~15
Free Sewing		<ul style="list-style-type: none"> ▲ As the pedal is stepped forward, the starttacking(if selected) will be done automatically, then machine will start normal sewing. Once the pedal returned to balance, machine will stop immediately. ▲ As the pedal stepped backward, the end tacking, trimming and wiping(if selected) will be done automatically
Constant-Stitch Sewing		<ul style="list-style-type: none"> ▲ Once the pedal is stepped forward, F, G stitches will be completed with E times. ▲ Constant-Stitch Sewing will perform the number of segments and times as setting, when the stitches are zero, machine will stop immediately.
Bar-Tacking Sewing		<ul style="list-style-type: none"> ▲ Once the pedal is stepped forward, all the seams of bar tacking, A, B, C, D sections will be completed with E times, and the trimming will be done automatically. ▲ The pedal must be returned to balance for next sewing.
Lower thread Counter		Enter lower thread counter interface

Soft start		Enable or disable the soft start
Needle Up / Needle Down		Select the stop position of needle bar
Trimming Enable		Enable or disable the trimming
Interface Selection		Switch current interface to another
One-Key Default /Lock keys		▲ Sewing interface: lock the keypad ▲ Parameter interface: restore a parameter to default
Parameter Function		Enter or exit parameter function interface
Save		Confirm and save current value of parameter
Add		Value increase
Sub		Value decrease

6. GET STARTED WITH YOUR MACHINE

Before operating the controller, the following items must be inspected and set up to ensure safe and reliable operation:

6.1 Machine ID

6.1.1 How to change the machine ID

Press hold 『A+』 key and turn on the power to access to adjust the machine ID, seven-segment displays F,G will display the ID, change it

and press to save.

6.1.2 Table of machine ID

ID	Model	Unit(sti/min)
1	GC20665KL14D3T3	2500
2	GC20665L14D3T4	2500
3	GC20666L14D2T4	2200
4	TW1-898L14D2T5	3500
5	TW1-999L14D2T5	2800
6	TW1-999L14D3T5-001	2800
7	TW1-899SL14D2T5	2800
8	TW2-898L14D2T5	2800
9	TW2-999L14D2T5	2500
10	GC24676BD2T5	2500
11	GC20676L14D2T3	2200
12	GC2263-1D3T3	2500

6.2 Adjust the ZERO OF THE MACHINE

- Press  and switch on the power, the panel displays "ZERO"
- Turn hand wheel slowly, the panel displays the current degree.
- When the needlebar is at the highest position, press  to confirm and save
- Restart the control box

7. OPERATING ELEMENTS

7.1 Single start back-tacking setting

- A Stitches = 0
Seven-segment display A display  .
Sewing process: B stitches back – normal sewing.
- A Stitches ≠ 0
Sewing process: A stitches forth – B stitches back – normal sewing

7.2 Double start back-tacking setting

- A Stitches = 0
Sewing process: B stitches back – B stitches forth – B stitches back – normal sewing.
- A Stitches ≠ 0
Sewing process: A stitches forth – B stitches back – A stitches forth – B stitches back – normal sewing

7.3 Single end back-tacking setting

- D Stitches = 0
Seven-segment display D display  .
Sewing process: C stitches back – end.
- D Stitches ≠ 0
Sewing process: C stitches back – D stitches forth – end.

7.4 Double end back-tacking setting

- D Stitches = 0
Sewing process: C stitches back – C stitches forth – C stitches back – end.
- D Stitches ≠ 0
Sewing process: C stitches back – D stitches forth – C stitches back – D stitches forth – end.

7.5 Lower thread counter

Set A11 to "1" to active the counter.

- **Enter interface:** Press  Or Special function interface SN F6(refer to 6.6).
- **Initialize the counter:** Press , the initial value of the lower thread counter which was set previously will be shown. Adjust it to a suitable value.
- **How the counter works:**
 - Display initial value
 - The counter reduces by 1 for every 10 stitches sewn.

- If the counter less than 1, the display area twinkled and buzzer sounds for 3 times. The machine will not start up again. Press **S** the warning will disappear and sewing will be possible, the counter reduces continue.
- Press **S** again, the display will return to the initial value

7.6 Product quantity counter

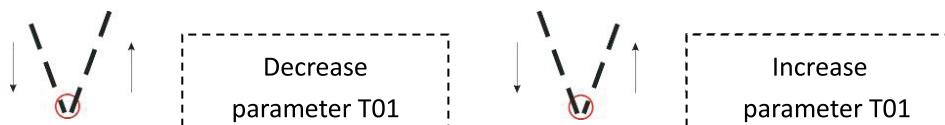
Set A11 to "1" to active the counter.

- **Enter interface:** Special function interface SN F2, refer to 6.2
- **Data acquisition:** In SN F2 interface, press **S** will be into collect process interface, seven-segment display D displays 『L』, seven-segment displays E,F,G will display the number of stitches for this process. It records the number of stitches and the number of trimmer. Press **S** to save the data and return SN F2 interface.
- **How the Counter works:** If sewn the number stitches more than the number of stitches collected 90%, and the number of trimming times more than collected, the counter add 1.
- **Clear Counter:** press **D%**

7.7 Adjust the backtack

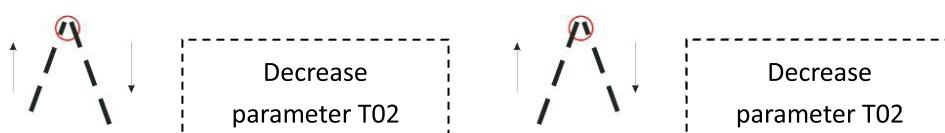
- Adjusting of RVE.SOL action time

For start/end backtack or bar tacking, if unbalanced situation is appeared during natural direction to reverse direction, please correct it as below:



- Adjusting of RVE.SOL release time

For start/end tacking or bar tacking, if unbalanced situation is appeared during reverse direction to natural direction, please correct it as below:



7.8 Quick functions on the keypad



Figure 1: Keypad on the machine arm

Foot stroke		Toggle foot stroke level
Start and end strips		This key cancels the general setting for sewing start and end strips. If strips are activated, pressing the key disables the next strip. If no strips are activated pressing the key sews the next strip.
Position of the needle		If the key is selected the needle moves to a specific position. This position is determined individually via the parameter settings, more information read D15, D16
Stitch Length		If this key is selected, the machine sews using the smaller stitch length selected at lower adjusting wheel for the stitch length
Additional thread tension		This key switches on the additional thread tension
Pause		If the pause switch is triggered, all functions are locked except parameters, the adjacent led light up, panel display "PAUSE"

7.9 Lock the hot keys and keypad



if  key is triggered, all functions on the keypad and hot keys are invalid.

7.10 Electronic hand wheel

Turning the hand wheel:

The value of "A23" is 1, electronic hand wheel is activated. By turning the hand wheel, you can move the needle bar forwards or backwards.

7.11 Hot keys

Pressing the Reverse switch:

Default: Reverse.

Refer to Parameter list, A04.

Pressing the hand wheel:

Default: None

Refer to Parameter list, A05.

7.12 Quick stroke adjustment via knee switch

On machines with quick stroke adjustment activated via a knee switch, the elevated sewing foot stroke is switched via the knee switch.

8. OPERATION OF THE SPECIAL FUNCTION INTERFACE

Press  could be access special function interface from normal function interface, showed as below:

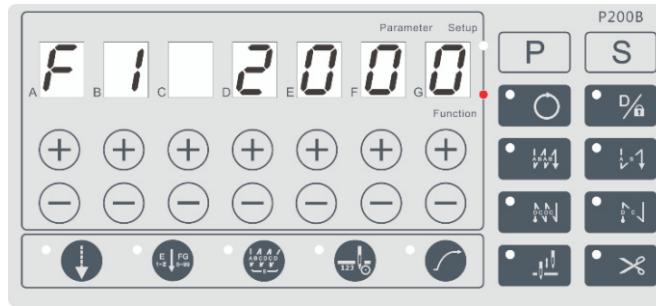


Figure 2: Function Interface

Bar A and B according to SN of function, bar D~G display contents, press **B+** and **B-** to select function:

8.1 Dynamic speed limitation

SN F1: display current speed up limitation, could be change during running.

8.2 Product quantity counter

SN F2: display the product quantity

8.3 Machine degree

SN F3: display the machine degree.

8.4 Torque enhancement function at low speed

SN F4: display D: press **D+** and **D-** to open/close the function.

Display F,G: 0~10, the gear.

8.5 Actual speed display

SN F5: display the actual speed.

8.6 Lower thread counter

SN F6: display how much the lower thread is remaining

9. PARAMETER INSTRUCTION

9.1 Setting parameter

Press **P** to enter Parameter Interface.

Seven-Segment display E display the parameter type, press “**E+**” and “**E-**” key to change it.

Seven-Segment display F, G display the parameter index, press “**F+/-**”, “**G+/-**” key to change it.

Seven-Segment displays A, B, C, D display the parameter value, press the keys under them to change it.

For example, Graph4: parameter index is 1, type is P, value of “S01” is 2000, the nixie tube will blink when change the value. Press **S** to confirm, press **P** to cancel and return to sewing interface.

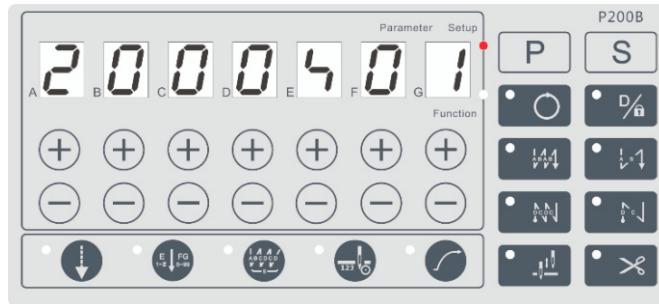


Figure 3: Parameter Interface

9.2 Get the permission of setting O type parameter

Only S, T and A type parameter can be select normally, if you want to change the O type parameter, you must power on while press **P** key, when you see 『DO EN』, you get the permission successfully.

9.3 Parameter solidifying

If users want to change some parameter's default value, then select the parameter, press **O** maintain a moment, after 『SD OK』 displaying, the default value has been changed.

9.4 Restore parameter through one-key default

Select any parameter in parameter interface, **D%**
default value. The bar will be twinkling if modified, use **S** to confirm or
P repeat change

9.5 Controller recovery

■ Resume the default value of all parameters

Set parameter **O17** to "ON", turn on the power again, after twinkling of "INIT" finished, all parameters have been default value themselves

■ Restore Factory Defaults

Set parameter **O51** to "ON", turn on the power again.

9.6 Abate safety switch

If you want to abate the function of Safe SW., you can change the value of "**O31**" from "1" to "0" normally, in a particular case, for example, the Safe SW. broke down, you can power on while press "**C+**" key to abate the function of Safe SW.

Warning: it means potential security problems for you if you abate the function of Safe SW., so attention please.

9.7 General parameter table

SN	RANGE	DESCRIPTION
S type Parameter		
S01	500~3500spm	Maximum sewing speed
S02	150~500spm	Minimum sewing speed
S03	500~2000spm	Speed adjustment for start back-tacking

S04	500~2000spm	Speed adjustment for end back-tacking
S05	500~2000spm	Speed adjustment for bar-Tacking
S06	500~2000spm	Speed adjustment for constant-stitch sewing
S07	150~300spm	Speed adjustment for trimmer
S08	200~500spm	Soft start speed
S09	500~3500spm	Speed adjustment for foot stroke gear 1
S10	500~3500spm	Speed adjustment for foot stroke gear 2
S11	500~3500spm	Speed adjustment for foot stroke gear 3
S12	500~3500spm	Speed adjustment for foot stroke gear 4
S13	500~3500spm	Speed adjustment for foot stroke gear 5
S14	500~3500spm	Speed adjustment for foot stroke gear 6
S15	500~3500spm	Speed adjustment for min-foot stroke
S16	50~500spm	Speed adjustment for pull back after trim
T type Parameter		
T01	1~200(millisecond)	Action time of the REV SOL.
T02	1~200(millisecond)	Release time of the REV SOL.
T05	1~500(millisecond)	Foot lifer-Delay time adjustment for pedal's feet lift position
T06	1~500(millisecond)	Running delay time adjustment for Automatic Foot Lifer
T09	1~1000(millisecond)	Safety switch-Delay time adjustment for machine vibration
T10	1~200(millisecond)	Pedal-Delay time adjustment for pedal vibration
T11	1~1000(millisecond)	Delay time adjustment when A20/A22 set as 1
A type Parameter		
A01	0~1	Needle positions 1 = Up Position 0 = Down Position
A02	0~1	Automatic Constant-Stitch sewing 1 = On 0 = Off
A03	0~1	Correction stop mode 1 = stop position accord to D15, D16 0 = random
A04	0~13	Function selection of reverse switch 0 = none 1 = reverse 2 = forward correction 3 = backward correction 4 = forward correction at machine stop, reverse at machine run 5 = backward correction at machine stop, reverse at machine run

		<p>6 = none 7 = none 8 = trim at normal sewing, foot lifer after trimming 9 = foot stroke 10 = single backtack supression 11 = 2nd STITCH LENGTH 12 = additional thread tension 13 = thread mode</p>
A05	0~13	Function selection of hand wheel switch, refer to A04
A06	0~1	<p>Trim selection 1 = trimmer valid 0 = trimmer invalid</p>
A07	0~1	<p>Lock machine buttons selection (machine buttons includes Hot Keys, Hand Wheel Switch, Reverse Switch) 0: machine buttons work 1: machine buttons not work</p>
A09	0~1	<p>Foot lift selection 1: Foot lifer function valid 0: Foot lifer function invalid</p>
A10	0~1	<p>Clamp selection 1: Clamp valid 0: Clamp invalid</p>
A11	0~1	<p>Product Quantity Counter 1 = On 0 = Off</p>
A12	0~1	<p>Lower thread Counter 1 = On 0 = Off</p>
A13	0~1	<p>Pull Back after Trim (angle refer to O35) 1 = On 0 = Off</p>
A14	0~1	<p>Automatic Foot Lifer when stopped 1 = ON 0 – Off</p>
A15	0~1	<p>Automatic Foot Lifer after trimming 1 = On 0 = Off</p>
A16	0~1	<p>Automatic constant-stitch sewing after start backtacking (only when A02=0) 1 = On 0 = Off</p>
A17	0~1	<p>Automatic end backtacking for constant-stitch sewing (only when A02=0)</p>

		1 = On 0 = Off
A18	0~1	Upper position when switch on the control 1 = On 0 = Off
A19	0~2	Function when Half-Heeling the pedal 2: thread cutting 1: foot lift 0: Balance
A20	0~1	Mode of start back-tacking (only for free sewing) 1: stitch for stitch 0: normal
A21	0~1	Soft start
A22	0~1	Mode of end back-tacking (only for free sewing) 1: stitch for stitch 0: normal
A23	0~1	Electronic handwheel 1 = On 0 = Off
A27	0~3	Mode of thread tension and thread tension reduction when sewing foot lift is active 0 = no thread tension lift 1 = thread tension lift in the seam 2 = thread tension lift after trimming 3 = thread tension lift in the seam and after trimming
A28	0~1	Automatic open additional thread tension when foot stroke adjust 0 = not related to Knee SW. ; not related to Keypad ; 1 = related to Knee SW. ; not related to Keypad ; 2 = not related to Knee SW. ; related to Keypad ; 3 = related to Knee SW. ; related to Keypad ;
A30	0~1	Correction mode 0: single correction 1: continuously correction
A36	0~11	Quick function on the keyboard key1 0: none 1: foot stroke 2: start and end strips 3: forward correction 4: stitch length 5: additional thread tension 6: pause 7: add power when low speed 8: reverse

		9: parting foot 10: threading mode 11: backward correction
A37	0~11	Quick function on the keyboard key2 Refer to A36
A38	0~11	Quick function on the keyboard key3 Refer to A36
A39	0~11	Quick function on the keyboard key4 Refer to A36
A40	0~11	Quick function on the keyboard key5 Refer to A36
A41	0~11	Quick function on the keyboard key6 Refer to A36
A43	0~1	Electronic handwheel rotation and motor steering correspondence 0: same 1: opposite
A50	0~1	Start with 2 nd stitch length
A51	0~3	Mode for automatic raising of the seam middle guide 0: Do not raise 1: With sewing foot lift 2: During bark-tacking and reverse 3: During back-tacking and reverse and sewing foot lift
D type Parameter		
D01	0~359(°)	Angle of needle bar up lever
D02	0~359(°)	Angle of needle bar down lever
D03	0~359(°)	Switch-on angle of Trimmer
D04	0~359(°)	Switch-off angle of Trimmer
D05	0~359(°)	Switch-on angle of Reverse SOL.
D06	0~359(°)	Switch-off angle of Reverse SOL.
D07	0~359(°)	Switch-on angle of thread clamp
D08	0~359(°)	Switch-off angle of thread clamp
D13	0~359(°)	Switch-on angle of thread tension
D14	0~359(°)	Switch-off angle of thread tension
D15	0~359(°)	Correction angle 1
D16	0~359(°)	Correction angle 2
D17	0~359(°)	Switch-on angle of short thread trimmer (only for TW1-999L14D3T5-001)
D18	0~359(°)	Switch-off angle of short thread trimmer (only for TW1-999L14D3T5-001)
O type Parameter		
O01	1~10(stitch)	Number of soft start stitches
O04	1~1000(millisecond)	Delay time for stitch for stitch backtrack. Refer to A20

O06	0~1	Automatic foot lifter release 1 = Automatic foot lifter release after the time of O07 0 = always hold
O07	5~30(second)	Refer to O06
O17	0~1	Refer to 5.5
O23	1~60(second)	The running time of aging test
O24	1~60(second)	The idle time of aging test
O25	1~720(hour)	The total time of aging test
O26	0~2	Set to "1/2" active the aging test
O31	0~1	Safety switch function 1 = open 0 = close
O32	0~1	Polarity of safety switch 0 = Normal closed 1 = Normal opened
O35	0~359	Angle of pull back after trimming
O48	0~100	The duty of clamp SOL
O51	0~1	Refer to 5.5
O56	0~4095	Pedal input MAX value: value \geq O57
O57	0~4095	Pedal input dividing value of high speed and low speed: O56 \geq value \geq O58
O58	0~4095	Pedal input dividing value of low speed and Balance: O57 \geq value \geq O59
O59	0~4095	Pedal input dividing value of Balance and Foot lifter: O58 \geq value \geq O60
O60	0~4095	Pedal input dividing value of Foot lifter and Trimming: O59 \geq value \geq O61
O61	0~4095	Pedal input MIN value: value \leq O60
O63	0~5	Pedal mode 0 = linear 1 = polyline 2 = curve(slow \rightarrow quick) 3 = curve(quick \rightarrow slow); 4 = S curve(slow \rightarrow quick \rightarrow slow) 5 = S curve(quick \rightarrow slow \rightarrow quick)
O64	500~5000	The speed of turning point when O63 set as 1
O65	0~4095	The value of turning point: O56 \geq value \geq O57
O69	0~1	Correction mode 0 = only the machine stopped 1 = before trimming
O83	0~720	Step width for electronic hand wheel
O84	0~200	Speed for electronic hand wheel
O91	1~10	Stitches of start with 2 nd stitch length

10. ERROE MESSAGES & POSSIBLE TROUBLESHOOTING

ERROE CODE	DESCRIPTION	SOLUTION
PEDAL	Pedal warning	<ul style="list-style-type: none"> - Check or replace the pedal - Pedal not connected - Do not pedal yet
CARE	Safe Switch problem	<ul style="list-style-type: none"> - Check the Safe Switch - Replace the safe switch
KEY1	Machine button warning	<ul style="list-style-type: none"> - Do not press machine button - Replace the buttons
E101	High AC voltage fault	<ul style="list-style-type: none"> - Check mains voltage - Stabilize mains voltage - Use generator
E103	High Bus voltage fault	<ul style="list-style-type: none"> - Check mains voltage - Stabilize mains voltage - Use generator
E106	Bus current overload	<ul style="list-style-type: none"> - Check the encoder and motor - Replace the encoder - Replace the motor
E107	Motor blocked	<ul style="list-style-type: none"> - Eliminate stiff movement in the machine - Replace the encoder - Replace the motor
E110	Encoder/Synchronizer fault	<ul style="list-style-type: none"> - check or replace the synchronizer for a belt-drive machine - check or replace the encoder for a direct-drive machine
E190, E290	Software Update Error	<ul style="list-style-type: none"> - Software update - Replace the control
E191, E291	Software Update Error	<ul style="list-style-type: none"> - Software update - Replace the control
E193, E293	Software Update Error	<ul style="list-style-type: none"> - Software update - Replace the control
E294	Software Update Communication Error	<ul style="list-style-type: none"> - Software update - Replace the control
E199	Software Update Error	<ul style="list-style-type: none"> - Software update - Replace the control
E900	Communication problem	<ul style="list-style-type: none"> - Restart the control - Replace the control

11. Controller Check

Press hold **S** during power on, it will display "TEST" and then enter the Check interface. Seven-Segment display A display check index, the else display contents.

11.1 Pedal

Display B,C shows the pedal position status, display D,E,F,G display sample value.

<i>BL</i>	Balance position
<i>L</i> <i>h</i>	Low-speed position, is stepping on the first paragraph
<i>H</i> <i>h</i>	High-speed position, is stepping on the second paragraph
<i>FP</i>	Foot position, anti-step on the first paragraph
<i>TT</i>	Trim position, anti-step on the second paragraph
<i>E</i> <i>r</i>	Not connected or the pedal is faulty

11.2 Synchronizer

Synchronizer: turning the motor, display C value changes from 0 to 1

Position encoder: turning the motor, display D E,F,G value changes between 0 to 720.

11.3 Keypad Test

Display B, C, D, E, F, G correspond to the six keys on keypad, when press the key,

the corresponding display will change from 0 to 1, press **+** to light on the corresponding LED, press **-** to light off, **S** to light on all and **P** to light off all, the correspondence between the digital tube and the function key is as follows

Display B: foot stroke

Display C: start and end trips

Display D: position of the needle

Display E: stitch length

Display F: additional thread tension

Display G: pause

11.4 Motor encoder

11.5 Output Device

Digital F, G shows the current test solenoid type, the corresponding relationship is as follows

Solenoid	Display
Trimmer	<i>Tr</i>
Foot	<i>F</i> <i>o</i>
Reverse	<i>r</i> <i>E</i>
Stroke	<i>h</i> <i>r</i>
Stitch length	<i>h</i> <i>L</i>
Clamp	<i>C</i> <i>L</i>
Main thread tension	<i>M</i> <i>T</i>
Additional thread tension	<i>A</i> <i>T</i>
Seam middle guide	<i>N</i> <i>d</i>

Press **S** to test.

11.6 Input Switches

- Display C: status of Reverse switch
- Display E: status of Safety Switch
- Display G: status of Knee Stroke Switch

11.7 Electronic Handwheel

- Display B: Rotation
- Display C: Press Switch
- Display DEFG: Encoder

11.8 Speed Limit Device to stroke

Digital Type: four gears

- Display C shows gear, display E, G display the status of the two switches inside.

Analog Type: Stepless speed change

- Display D, E, F, G show the sample value of the potentiometer.
- Adjustment: press [P] to save two gear position, and press [S] to save six gear position.

11.9 AC voltage

Display the current AC input voltage

e.g: **9 220**, AC voltage 220v.

11.10 Bus voltage

Display the current bus input voltage

e.g: **A 310**, bus voltage 310v.

A phase current sampling reference

11.12 B phase current sampling reference

11.13 AD1 sample value

11.14 AD2 sample value

11.15 AD3 sample value

AD4 sample value

11.17 Main MCU Software Version

E.g: **H 70 100**, version1.00

11.18 Software Release Date

E.g: **I 16 100 I**, released on October 1, 2016

11.19 Slave MCU Software Version

E.g: **J 50 100**, version1.00

12. Appendix

12.1 Seven-Segment Display Characters Compare Table

0	1	2	3	4	5	6	7	8	9
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0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J
R	b	C	d	E	F	G	H	i	U
K	L	M	N	O	P	Q	R	S	T
L	L	n	n	o	P	q	r	r'	r
U	v	W	X	Y	Z				
U	U	W	W	P	—				

12.2 How to update the control box with the update module

User can update software of the control box by update module if necessary, the operations showed as below

- Switch off the power, plug the update module into speed controller



- Switch on the power, upgrading starts automatically, it will be accomplished after "ALL OK" displayed. Then switch off and plug the speed controller, all function will be normal after switch on again.

TW5-898-2-L14-D2T5

1- & 2-NEEDLE POST BED DIRECT DRIVE COMPOUND
FEED LOCKSTITCH MACHINE WITH THREAD TRIMMER



This machine may only be operated by adequately trained operators
only after having completely read and understood the instruction manual.

Parts are subject to changes in design without prior notice.



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