



TYPICAL

GC20665

**1-NEEDLE COMPOUND FEED HEAVY
DUTY SEWING MACHINE**

OPERATION INSTRUCTION / PARTS MANUAL

- ☐ Please don't adjust and repair the machine by non-professionals, except adjusting stitch.
- ☐ Specifications subject to change without notice

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Operation Instruction

1. Brief introduction

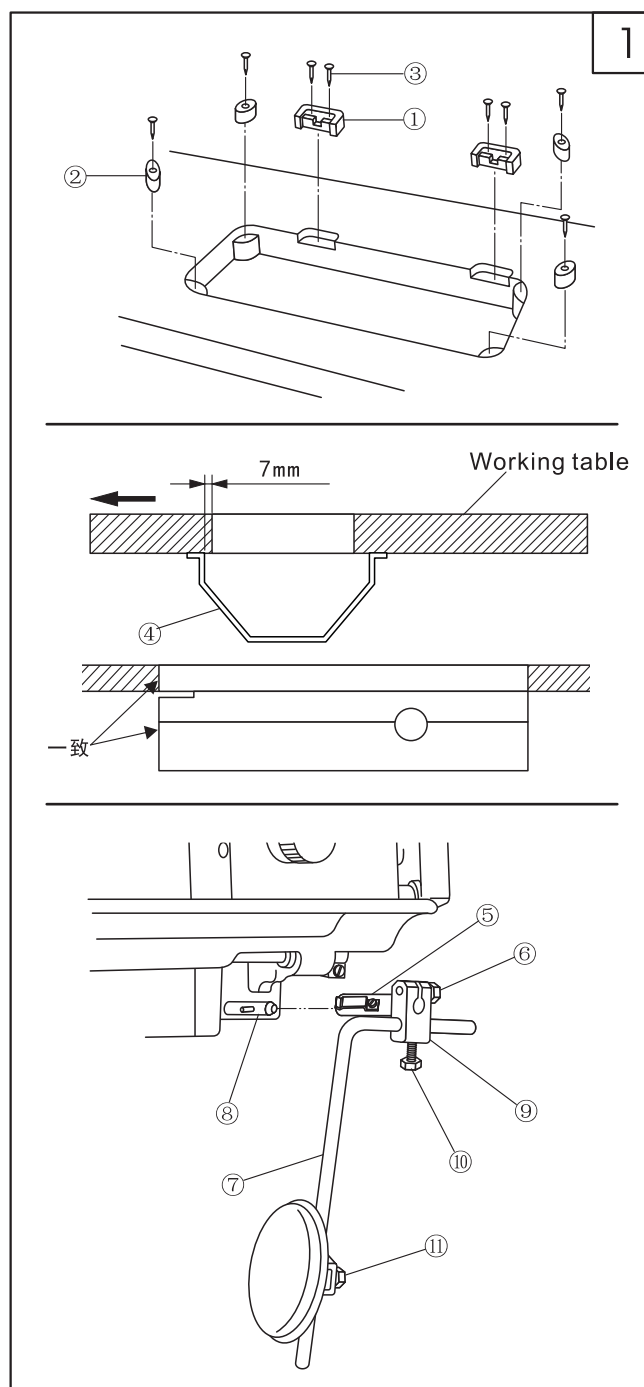
This compound feed sewing machine is designed with unique feed mechanisms, which make sewing of uneven and thick materials easy. Smooth, uniform and neat stitches are promised. The machine runs with high speed and low noise thanks for its' vertical-axis rotating hook, sliding lever take-up and synchronized belt driven mechanisms. It is designed for sewing of car seats, sofas, leather bags and tents industry.

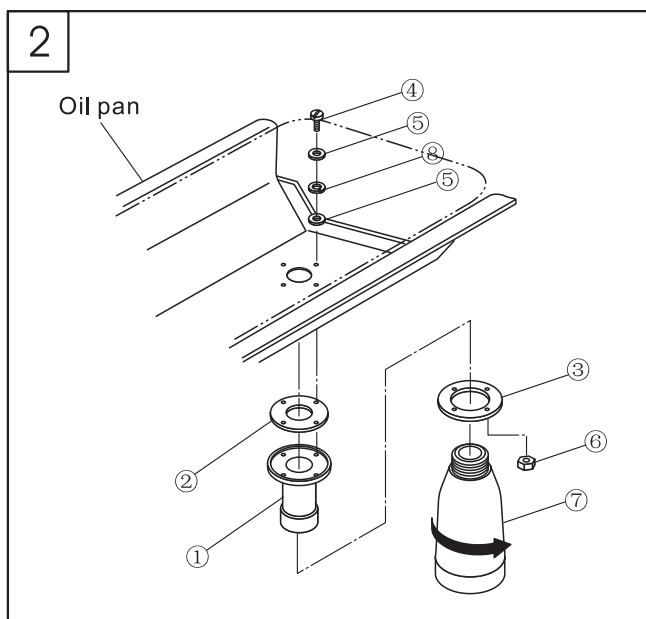
3. Machine installation (Fig.1)

1. Setting of hinges and cushions of machine head
Fix hinges ① and rubber cushions ② into the working table by nails ③.
2. Setting of oil pan
Fix oil pan ④ under the working table by 8 wood screws as per illustration.
3. Install knee lift connector ⑤, crank ⑨ and lever ⑦ to the knee lift shaft ⑧ properly.
4. Adjust the position of the cushion by screw ⑥, ⑩ and ⑪

2. Main specifications

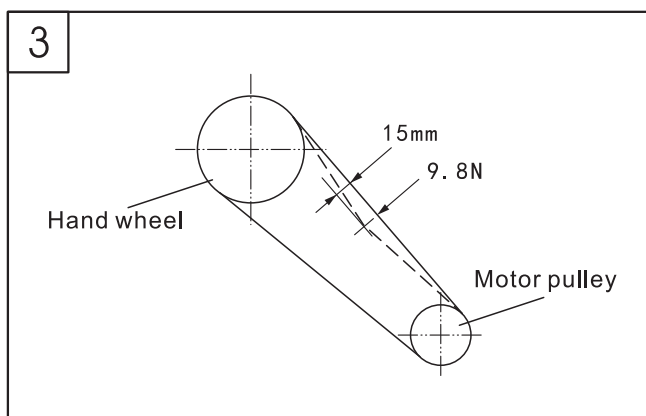
Applications	Medium and heavy weight materials
Max sewing speed	2500 s.p.m
Max stitch length	9mm
Needle bar stroke	36mm
Needle	DP×17(Nm125~Nm180) 24#
Lubrication	Oil wick (Rotating hook self oiled)
Rotating hook	Self oiled big rotating hook
Presser foot lift height	9mm by hand, 16mm by knee
Motor power	370W





4. Setting the waste oil collector (Fig.2)

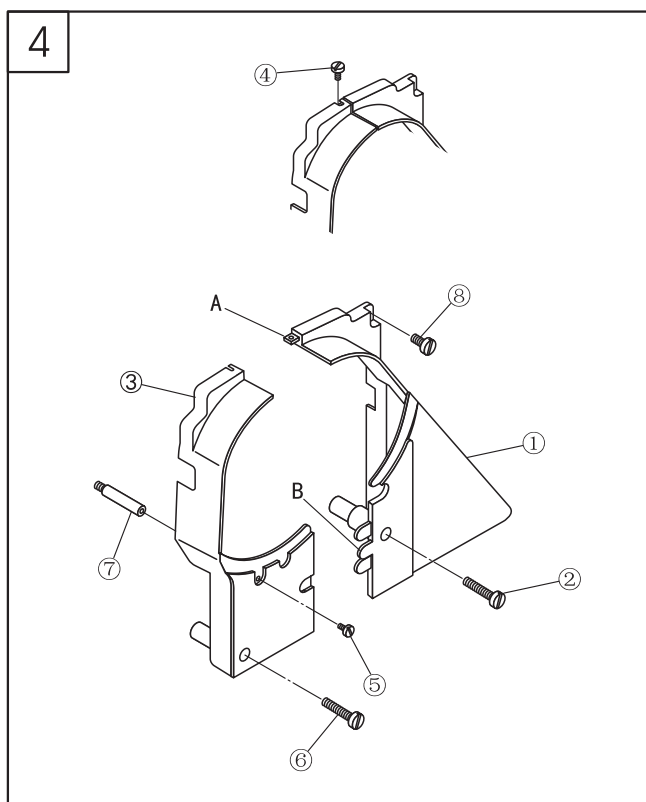
1. Install oil bolt ①, oil seal ② and washer ③ to the oil pan. Put spacer ⑤, washer ⑦ onto screw ④ and fix them with screw ⑥
2. Screw oil pot ⑦ up to the oil bolt ①.



5. Tension of belt (Fig.3)

Adjust the height of motor to regulate the tension of belt. Press the center of belt with a force of 9.8 N, displacement should be 15mm, that means tension is proper.

Note: Turn off the power and make sure the motor stopped before regulation.



6. Installing the belt cover (Fig.4)

1. Screw the belt cover supporting pole into the screw hole.
2. Install belt cover ① to the machine head by setscrew ② and ⑧.
3. Set belt cover ③ to A and B in cover ①.
4. Fix belt cover ③ by setscrew ④, ⑤ and ⑥.

Note: After installation, make sure the belt cover doesn't touch the belt and handwheel.

7. Lubrication (Fig.5)

1. Lubrication in the face plate

- 1). Remove face plate screw.
- 2). Open face plate ① as per illustration.
- 3). Drip oils to positions signed by arrow.
- 4). Close the face plate.
- 5). Tighten the screw.

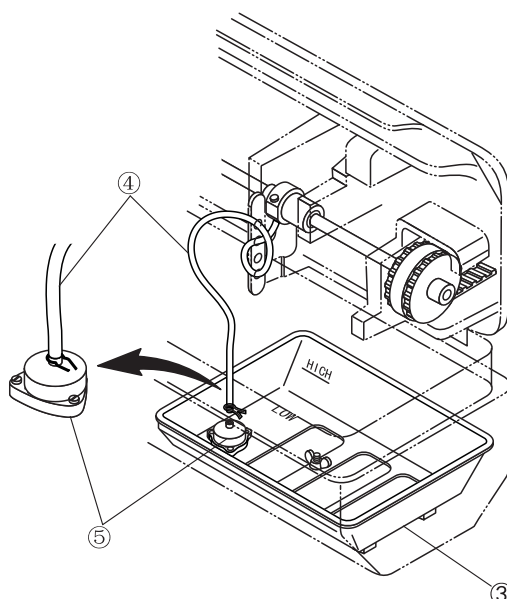
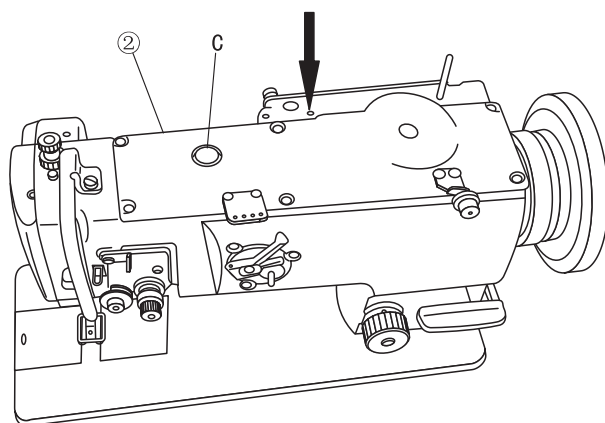
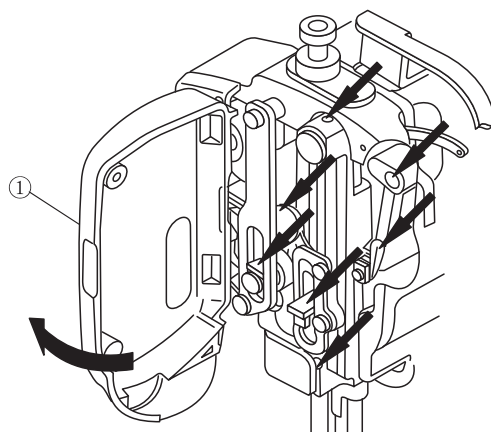
2. Lubrication in the arm

- 1). Drip oils to the signed position everyday.
- 2). Oil the machine before its' Initial running or after a long time idle at signed point and, remove top cover 2, drip oils to all felts and wicks inside the arm.

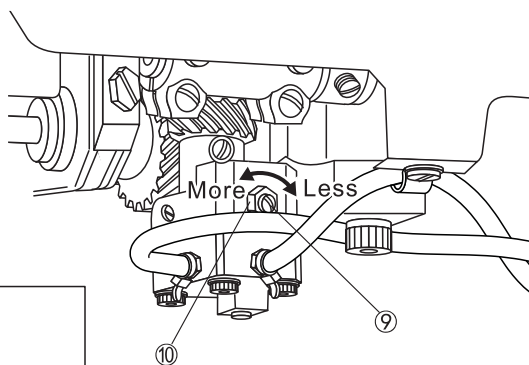
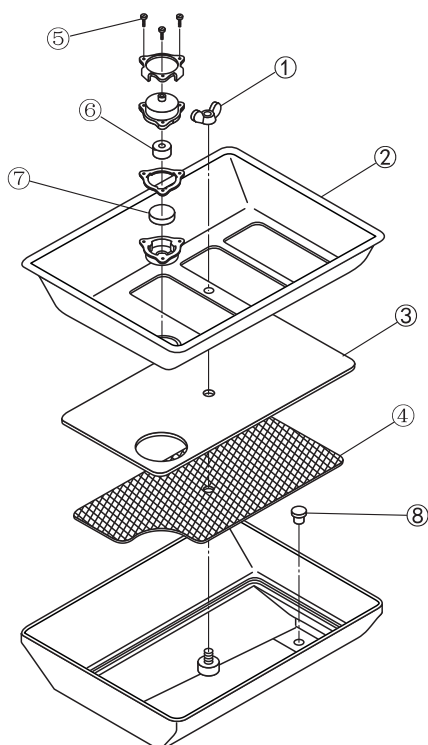
3. Small oil pan

- 1). Insert small oil pan 3 into the oil pan, with the projecting position into the waste oil hole.
- 2). Insert oil tube ④ into filter ⑤ in the small oil pan and fasten by clip.
- 3). Infuse sewing machine oil into small oil pan to the mark of HIGH.
- 4). Replenish oil in time when oil level is below LOW mark.
- 5). Run the sewing machine after replenishment, oil should be viewed moving in the oil window C when sewing speed is over 1500rpm.

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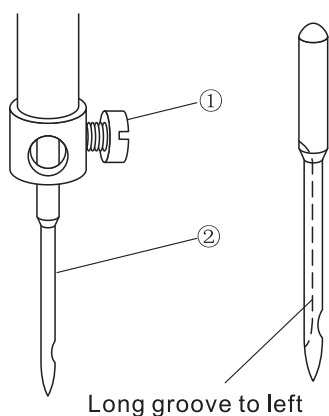
Paper strip

8. Cleaning the small oil pan (Fig.6)

- 1.Remove oil tube off the small oil pan.
- 2.Take off screw ①, tray ②, filter ③ and supporter ④, clean the small oil pan.
- 3.Remove screw ⑤, clean filter element ⑥ and magnet ⑦.
- 4.Take off plug ⑧ from small oil pan to discard waste oil and insert the plug ⑧. Oil should be drained before taking out the small oil pan.
- 5.Put filter element ⑥ and magnet ⑦ into the case and fix on tray ② with screw ⑤.
- 6.Then put supporter ④, filter ③ and tray ② back in sequence, fix them with screw ① on the small oil pan.
- 7.Insert oil tube into the small oil pan and fix with clip.

- 8.Loosen screw ⑩ to regulate oil of rotating hook by turning screw ⑨. Turn clockwise to reduce oil, counterclockwise to increase oil.
- 9.Hold a paper strip close to the rotating hook for 5 seconds, oil sprays as in the illustration shows oil is proper in the hook.

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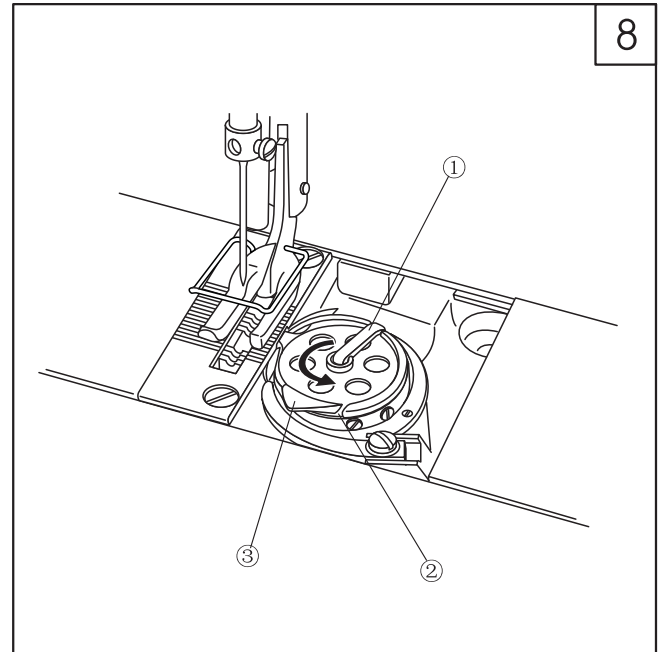
Long groove to left

9. Setting the sewing needle (Fig.7)

- 1.Turn the handwheel to raise the needle bar to its' highest point.
- 2.Loosen setscrew ② and have the long groove in the needle ① face leftward.
- 3.Insert needle fully.
- 4.Tighten setscrew ②.

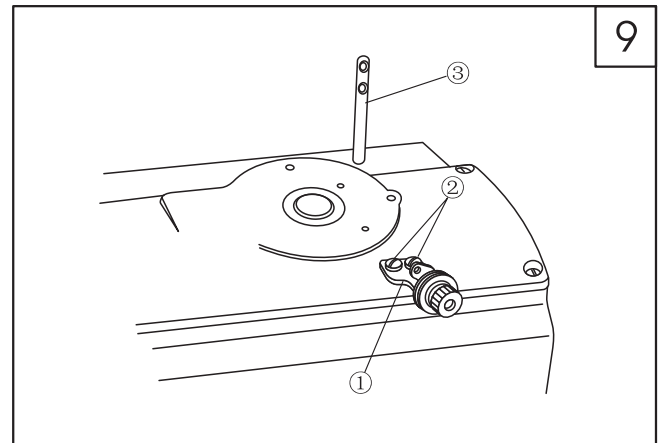
10. Threading the bobbin (Fig.8)

- 1.Lift latch ① and take out the bobbin.
- 2.Insert bobbin correctly and close the latch.
- 3.Draw thread through slot 2, under horn 3 and tension spring.
- 4.Bobbin should turns in direction of the arrow when you draw the thread.



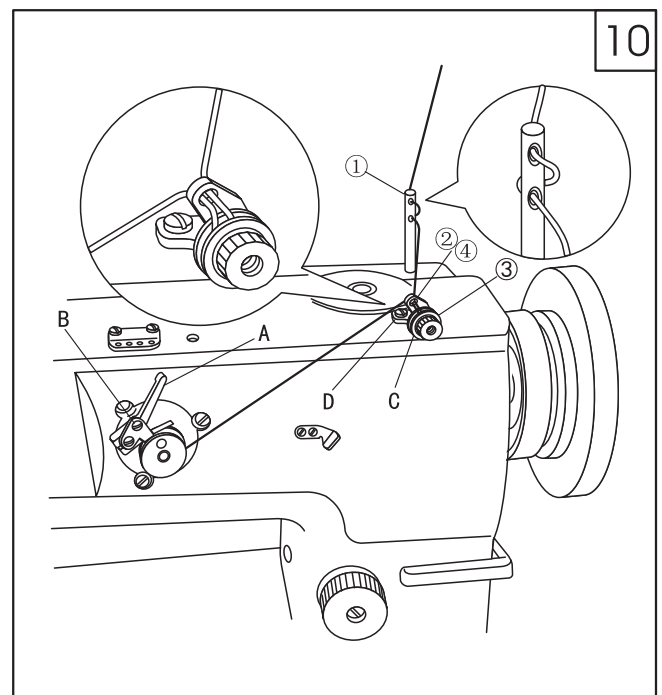
11. Installing the thread winding guide (Fig.9)

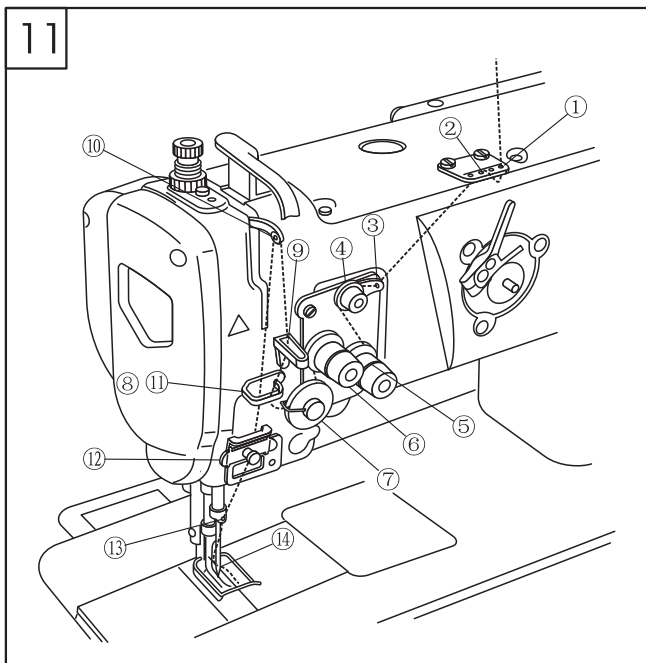
- 1.Mount winding guide ① onto the top cover with setscrew ②.
- 2.Insert thread finger onto the machine head.



12. Winding bobbin thread (Fig.10)

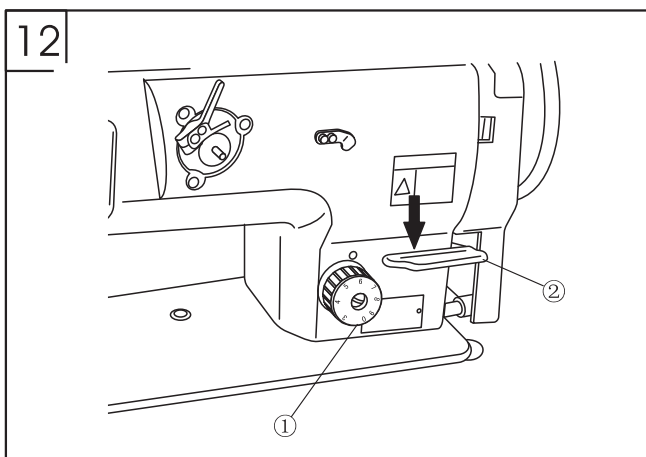
- 1.Thread in sequence ① ~④, then coil around the bobbin several circles to fix.
- 2.Press latch A.
- 3.Loosen screw B to adjust the latch to get the proper thread winding, 80% of the bobbin capacity.
- 4.If thread wound unevenly, move guide C to regulate and fasten with screw D.
- 5.Latch get ungeared and finish winding automatically.





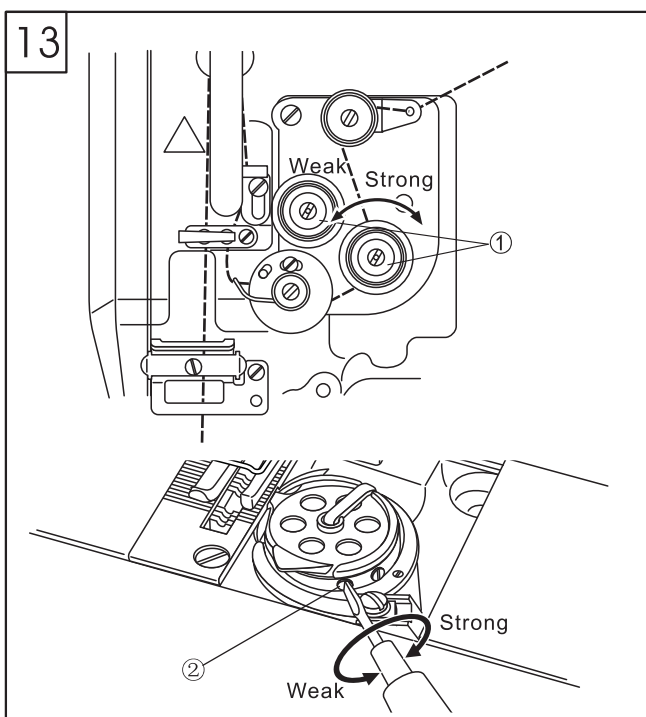
13. Threading the needle (Fig.11)

Thread in sequence as per the illustration.



14. Stitch length (Fig.12)

Turn the stitch regulating dial ① leftward or rightward to get your required stitch length. Press reverse lever ② to start reverse sewing, loose it to restore normal sewing.



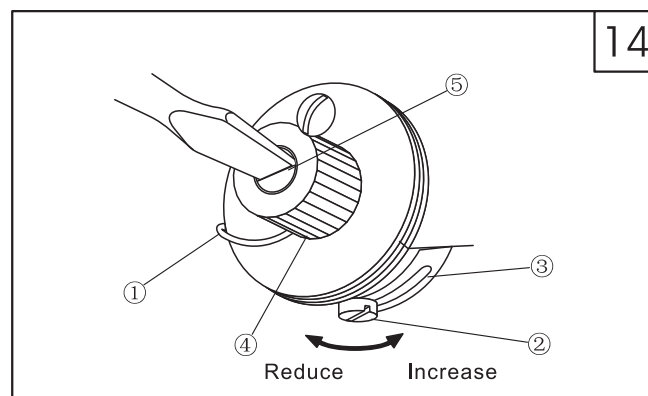
15. Thread tension (Fig.13)

1. Tension of upper thread
Turn the tension nuts ① clockwise to increase upper thread tension, counterclockwise to reduce the tension.

2. Tension of bobbin thread
Turn the tension nut ② clockwise to increase bobbin thread tension, counterclockwise to reduce the tension.

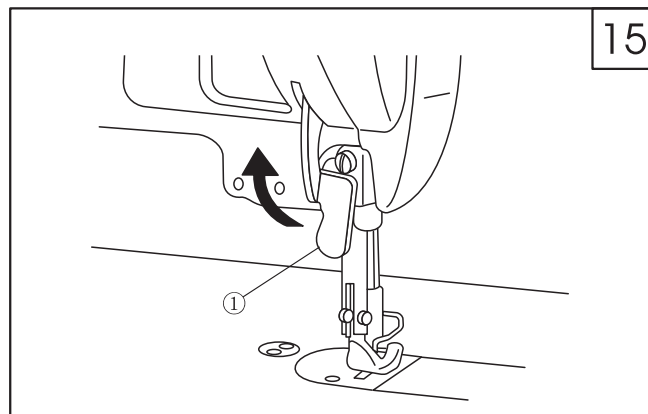
16. Adjusting thread take-up spring (Fig.14)

- 1.To change the take-up spring swing range
 - a.Loosen setscrew ② and move plate ③ to adjust the take-up spring.
 - b.Move plate ③ rightward to increase take-up spring swing range, leftward to reduce swing range.
- 2.To change the rigidity of take-up spring
Loosen nut ④, turn shaft ⑤ counterclockwise to increase rigidity, clockwise to reduce.



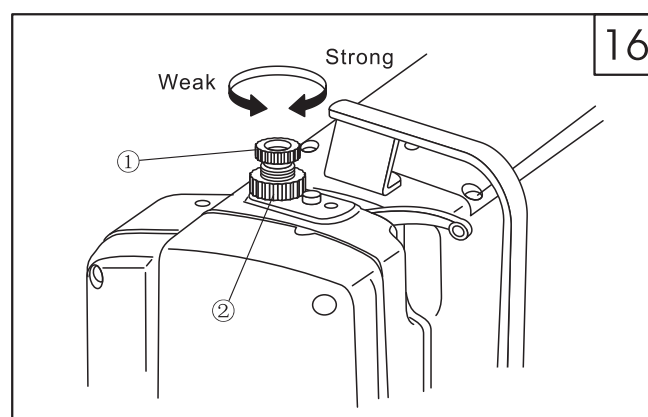
17. Presser foot lift (Fig.15)

- 1.Stop the presser foot at its' upper motion. Raise the foot lift lever ① as illustration. The presser foot rises 9mm then stop.
- 2.Lower the lift lever ① to restore the presser foot.



18. Pressure of presser foot (Fig.16)

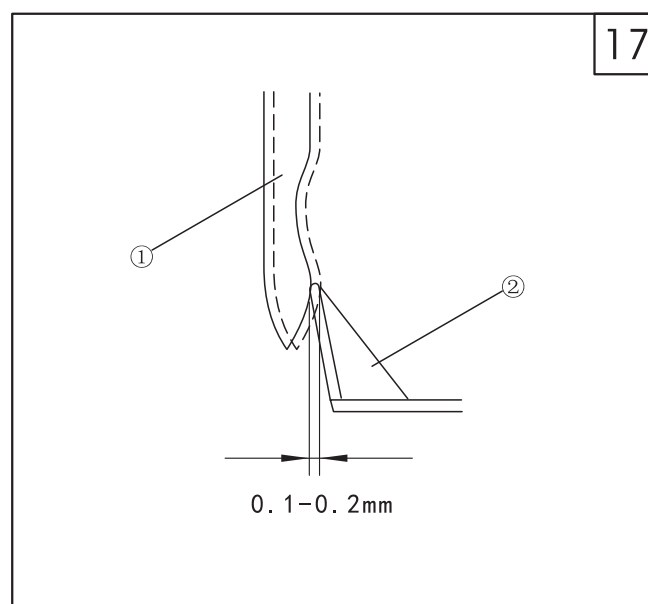
- Turn the regulating bolt ① rightward to increase the pressure, counterclockwise to reduce. Tighten nut ② after adjustment.



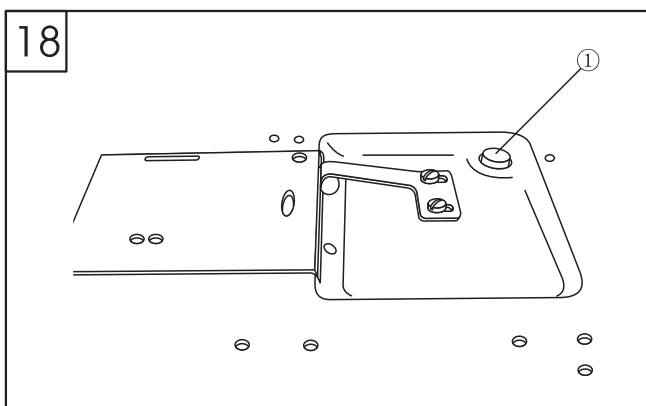
19. Adjusting needle guard plate (Fig.17)

Check the position of needle guard plate after change the rotating hook. The standard position of the guard plate ② is 0.1~0.2mm against needle ①. If the clearance is improper, bend the guard plate to adjust.

- 1.To bend the guard plate inward, insert a screwdriver outside.
- 2.To bend the guard plate outward, insert a screwdriver inside of the plate.



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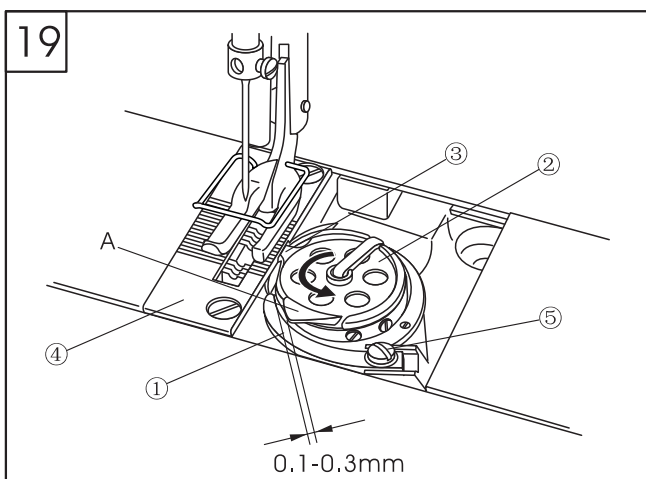


20. Reset of safety clutch (Fig.18)

In case the rotating hook applied with a strong force during operation because of thread jamed inside of hook, to protect the hook and the teeth belt from damage, the safety clutch start working. The rotating hook stop rotating even the handwheel is turning. Check the machine and resolve the problem, then reset the safety clutch.

1. Presse down pushbutton ① in the machine head bed, Firmly turn the handwheel reversely at the same time.
2. When a cluck sound is heard, the safety clutch is reset successfully.

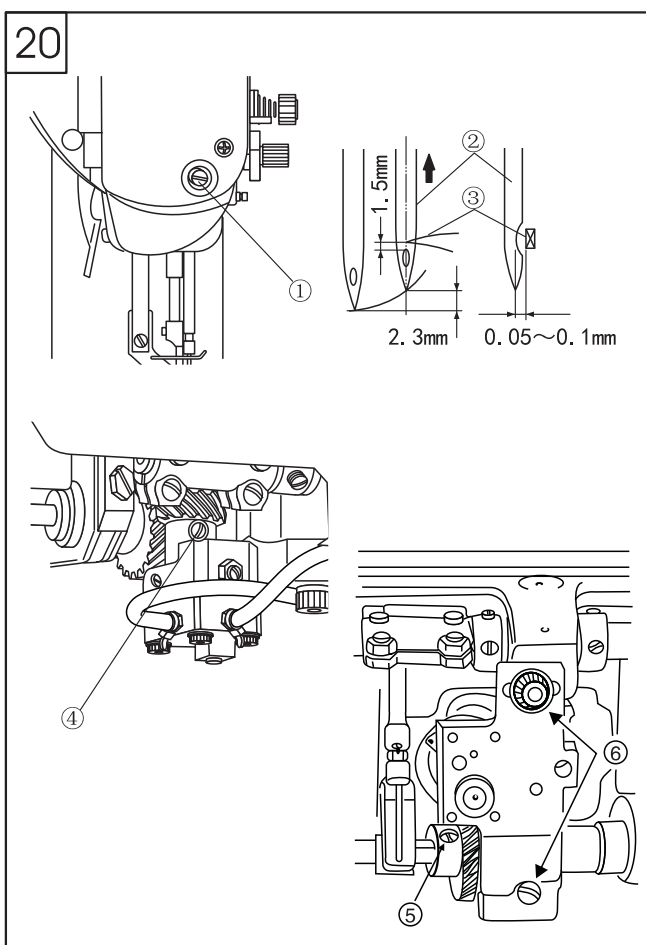
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21. Adjusting hook thread opener (Fig.19)

1. Turn the handwheel in normal direction to move the thread opener to its ultimate position.
2. Turn the bobbin case ② in direction pointed with arrow, to make stopper ③ (the projection part) against the notch in the needle plate ④.
3. Loosen opener setscrew ⑤, adjust until the clearance between horn A and the opener is 0.1~0.3mm.

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22. Timing between needle and rotating hook (Fig.20)

1. Turn the stitch regulating dial to 0.
2. Turn the handwheel to raise needle bar by 2.3mm from its' lowest point. Loosen needle bar joint screw 1, adjust and make top of the needle hole is 1.5mm from the hook tip. Tighten screw 1.
3. Turn the handwheel to raise needle bar by 2.3mm from its' lowest point. Adjust and make the hook tip at the center of the needle axis. Tighten the 2 gear(small) setscrew s4, with the V-screw align with the V-notch of the hook shaft.
4. With the hook tip 3 aligned with needle 2 axis, loosen the hook shaft saddle setscrew 6 and regulate its' position leftward or rightward to make clearance between hook tip and needle is 0.05~0.1mm. Tighten screw 6.
5. Loosen the 2 gear(big) setscrews 5, move gear(big) left or rightward to make hook tip3 aligned with needle 2 axis. Tighten setscrews 5, with the 1st screw aligned with the flat notch of the lower shaft.

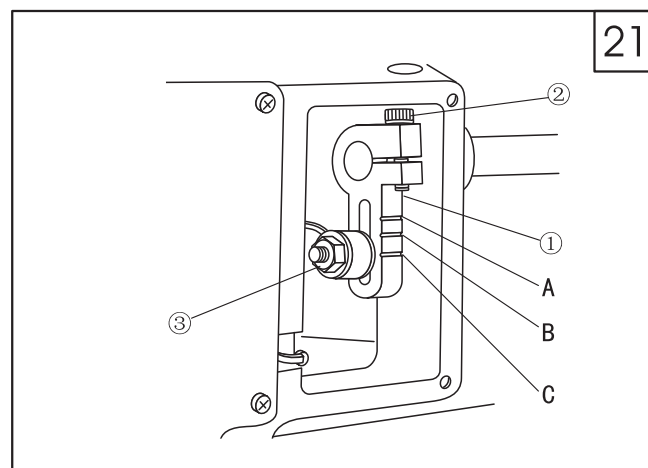
23. Alternating lift amount of presser feet (Fig.21)

Generally, for sewing of materials of different quality or thickness, you can adjust alternating lift amount of presser feet by moving upper feed crank ① up or down within the range of the slot to get the best possible stitches. Move the crank up to increase alternating lift amount, move down to reduce.

Tighten nut ③ after adjusting.

In case the lift amounts of the 2 feet is different, move the 2 feet to align with the needle plate surface, then loosen crank setscrew ②. Turn the handwheel in normal direction and tighten screw ②, the lift amount of big foot get bigger and small foot get smaller. Turn the handwheel reversely, the lift amount of small foot get bigger and big foot get smaller.

Remove the right side of the window plate, the upper feed crank ① can be observed.



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Presser feet alternating lift amount

Mark A	5mm
Mark B	4mm
Mark C	3mm

24. Settings for different speeds

Alternating lift amount	Stitch < 6mm	6mm < Stitch < 9mm
Less than 3mm	2,500rpm	2,000rpm
3~4mm	2,000rpm	2,000rpm
4~6.5mm	1,600rpm	1,600rpm

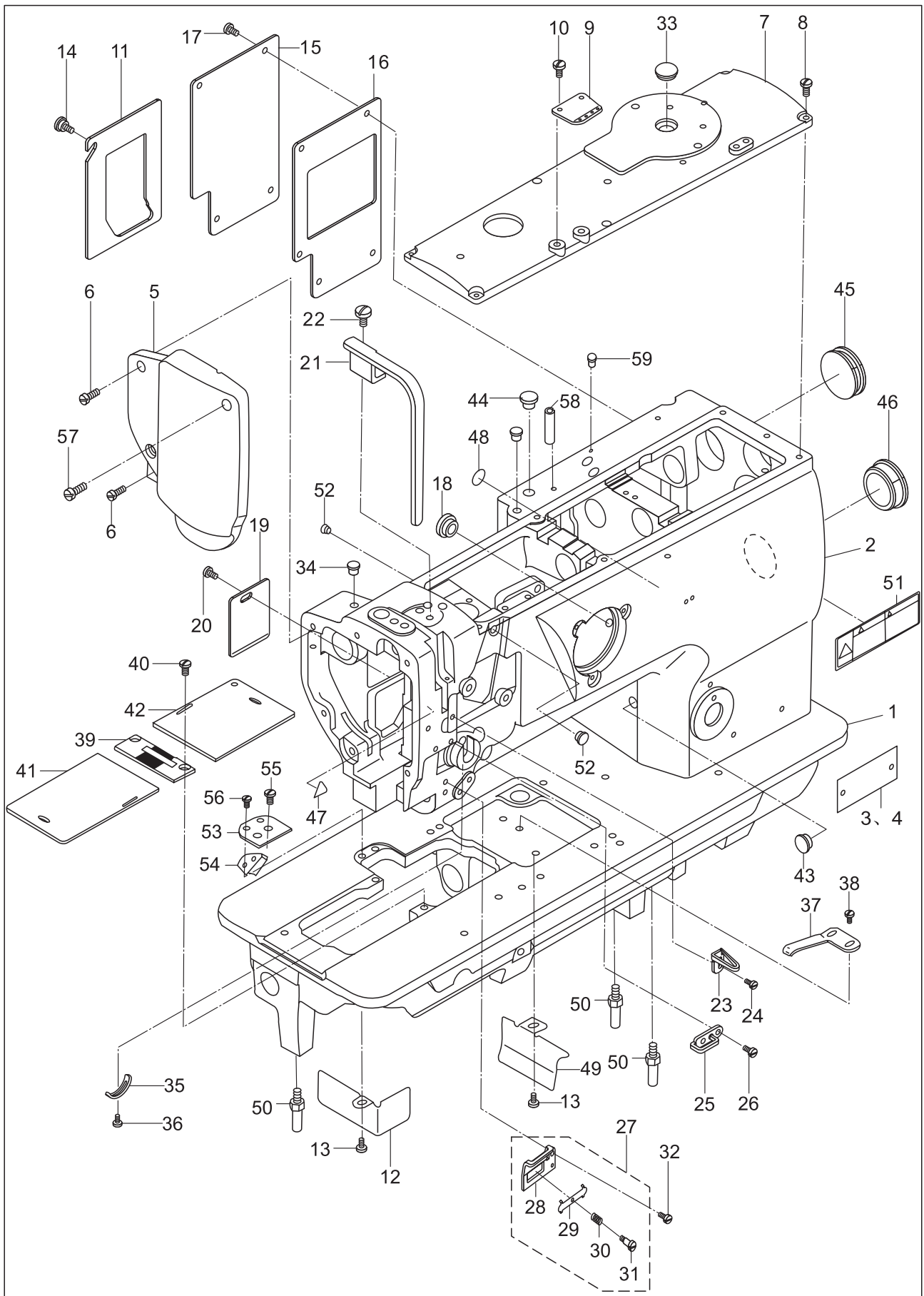
Make proper settings for different speeds accordingly. Do not surpass the standard.

25. Troubleshooting

Trouble	Possible cause	Solution
1.Thread breaking (2~3mm thread left on the cloth)	1. Damage on the rotating hook slots, needle point, hook tip and needle plate 2. Needle thread too tight 3. Collision between needle and rotating hook 4. Rotating hook oiled insufficiently 5. Needle thread too loose 6. Thread take-up spring too rigid 7. Too fast or slow timing of rotating hook and needle	1. Polish the damaged position, thorns with sand paper or rasp 2. Weaken the needle thread tension 3. Refer to 22. Timing between needle and rotating hook 4. Adjust oil amount (7. Lubrication) 5. Increase the needle thread tension 6. Reduce the rigidity of take-up spring 7. Refer to 22. Timing between needle and rotating hook
2. Skipped stitch	1. Too fast or slow timing of rotating hook and needle 2. Presser foot pressure too weak 3. Clearance between the top of needle hole and the rotating hook tip not proper 4. Wrong needle	1. Refer to 22. Timing between needle and rotating hook 2. Tighten the pressure adjusting bolt 3. Refer to 22. Timing between needle and rotating hook 4. Replace the needle with correct one
3. Loose stitch	1. Bobbin thread doesn't pass under the tension spring of the bobbin case 2. Roughness on the rotating hook 3. Bobbin stop rotating 4. Bobbin thread too loose 5. Bobbin thread too tight 6. Damage of the needle point	1. Refer to 10. Threading the bobbin 2. Polish with sand paper or rasp 3. Replace bobbin or rotating hook 4. Increase the bobbin thread tension 5. Reduce the bobbin thread tension 6. Replace the needle

Parts Chart

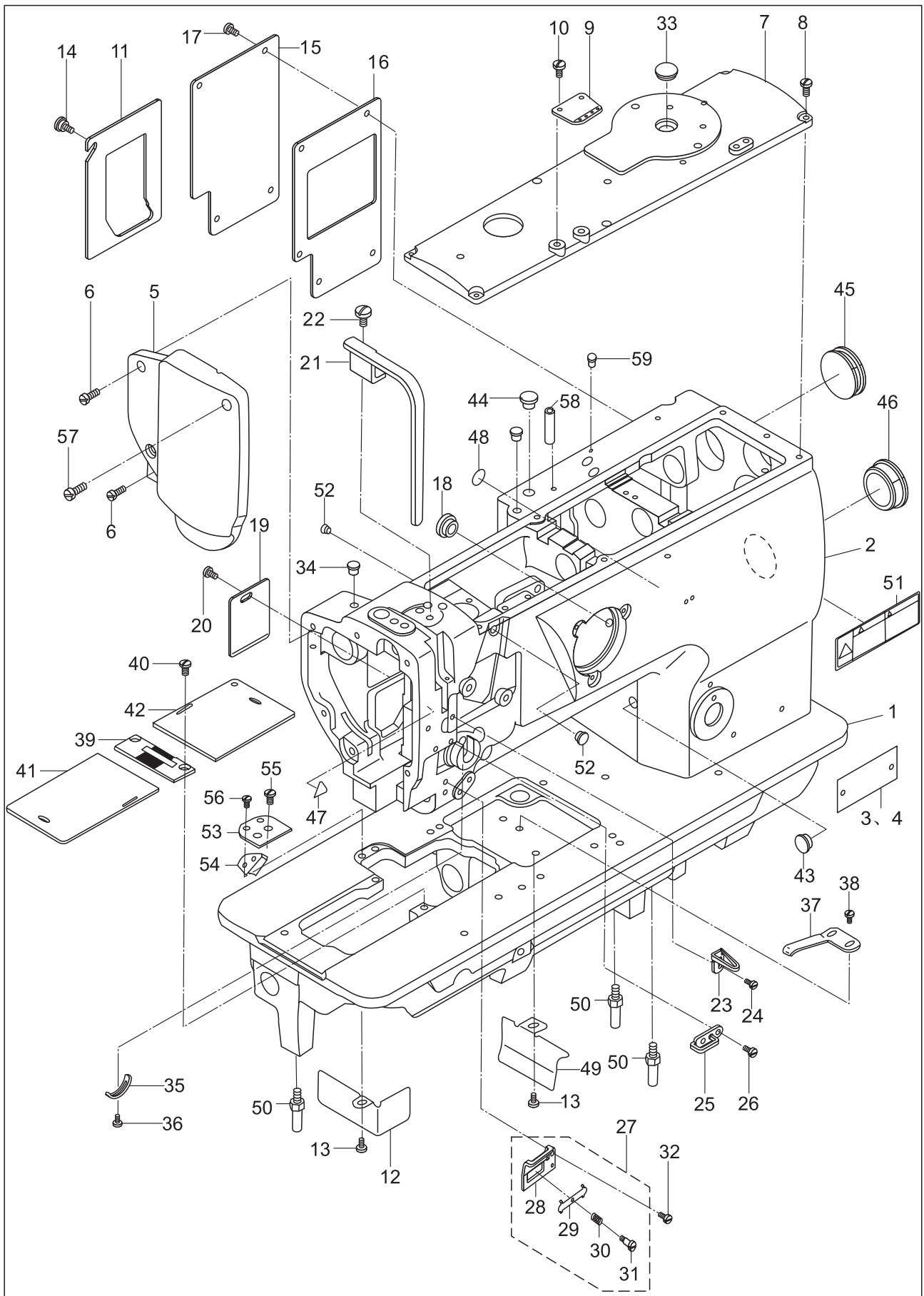
1. Arm and Bed



1. Arm and Bed

No.	Part Number	Name	Qt.	Remark
1	199WF2-001	Bed	1	
2	119WF2-016	Arm	1	
3	199WF2-002A	Model plate	1	
4	199WF2-002B	Model plate	1	
5	92WF2-003	Face plate assy	1	
6	1WF5-039	Screw	2	
7	92WF2-009	Top cover	1	
8	21WF4-047	Screw	6	SM11/64" × 40
9	199WF2-017	Upper thread guide	1	
10	21WF1-062	Screw	1	SM3/16" × 32
11	92WF2-007	Side cover	1	
12	199WF2-003	Cover	1	
13	21WF4-047	Screw	2	SM11/64" × 40
14	92WF2-008	Screw	1	
15	92WF3-005	Back cover	1	
16	92WF2-006	Packing	1	
17	1WF1-011	Screw	5	SM11/64" × 40
18	92WF2-030	Rubber plug	2	
19	92WF2-011	Small cover	1	
20	1WF1-011	Screw	1	SM11/64" × 40
21	92WF2-004	Thread take-up lever cover	1	
22	13WF2-045	Screw	1	SM15/64" × 28
23	92WF2-013	Thread guide	1	
24	36WF1-016	Screw	1	SM9/64" × 40
25	92WF2-014	Thread guide	1	
26	1WF1-007	Screw	2	SM9/64" × 40
27	92WF2-015	Lower thread guide assy	1	
28	92WF2-015A	Thread guide	1	
29	92WF2-015B	Plate	1	
30	92WF2-015C	Spring	1	
31	92WF2-015D	Screw	1	SM9/64" × 40
32	1WF1-007	Screw	1	SM9/64" × 40
33	17WF1-009	Rubber plug	1	
34	92WF2-029	Rubber plug	2	
35	50WF2-022	Plate for take-up spring	1	
36	1WF1-026	Screw	1	SM9/64" × 40
37	199WF2-004	Leafspring	1	
38	2KT5-005	Screw	2	SM11/64" × 40

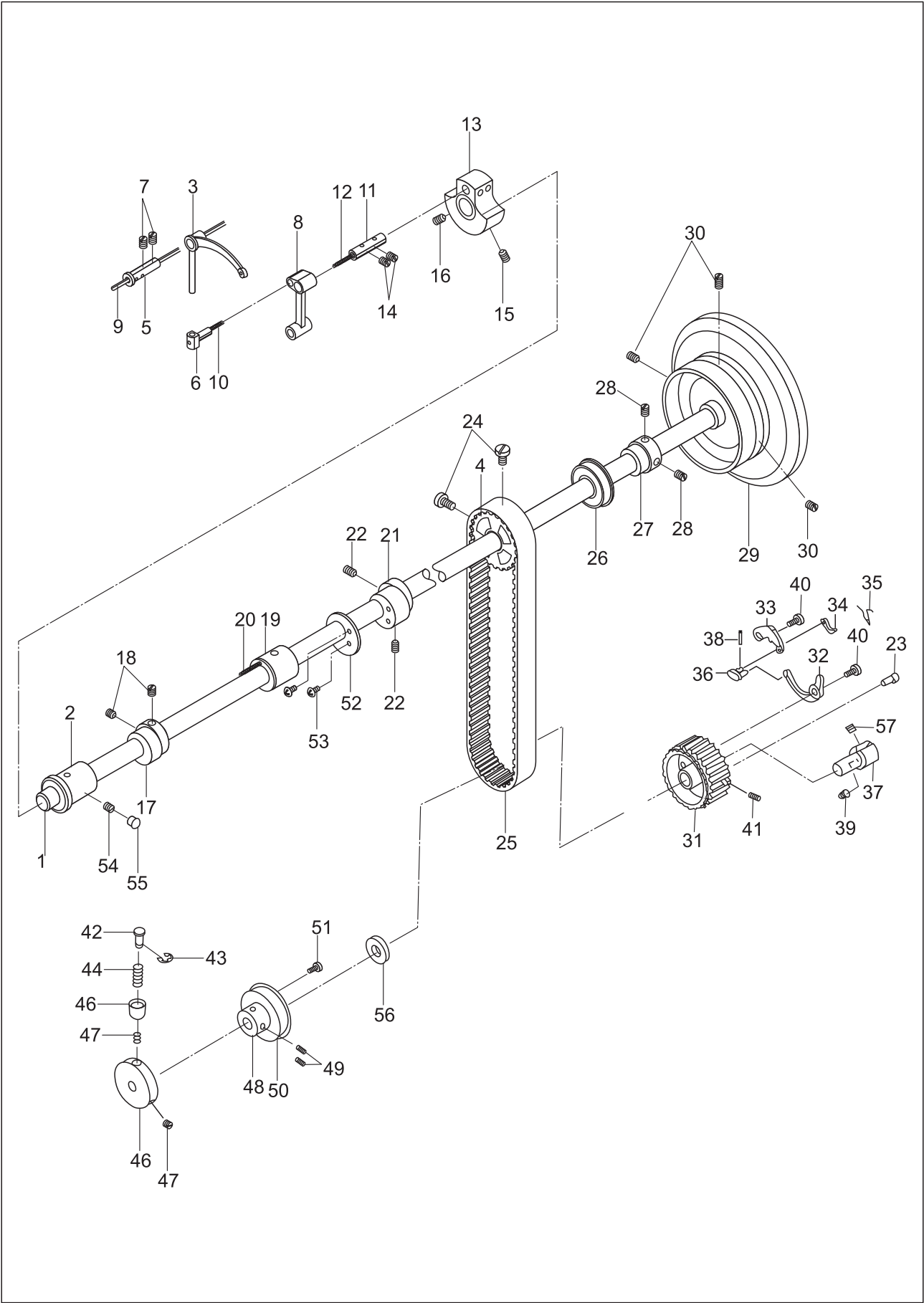
1. Arm and Bed



1. Arm and Bed

No.	Part Number	Name	Qt.	Remark
39	199WF2-005	Needle plate	1	
40	199WF2-006	Screw	2	
41	199WF2-007	Sliding plate (L)	1	
42	199WF2-008	Sliding plate (R)	1	
43	92WF2-028	Rubber plug	1	
44	92WF2-028	Rubber plug	1	
45	92WF2-032	Rubber plug	1	
46	92WF2-031	Rubber plug	1	
47	59WF1-010	Caution mark	1	
48	21WF4-050	Ground wire mark	1	
49	199WF2-009	Oil shield	1	
50	199WF2-010	Screw	3	
51	1KT1-005	Caution label	1	
52	199WF2-011	Rubber plug	2	
53	199WF2-012	Auxiliary cover	1	
54	199WF2-013	Supporter	1	
55	50WF2-031	Screw	2	
56	199WF2-014	Screw	2	SM9/64" × 40
57	26210	Screw	1	SM15/64" × 28
58		Pin	1	GB/T 879.1 4.5 × 20
59	199WF2-015	Rubber plug	2	

2. Arm shaft & thread take-up mechanisms



2. Arm shaft & thread take-up mechanisms

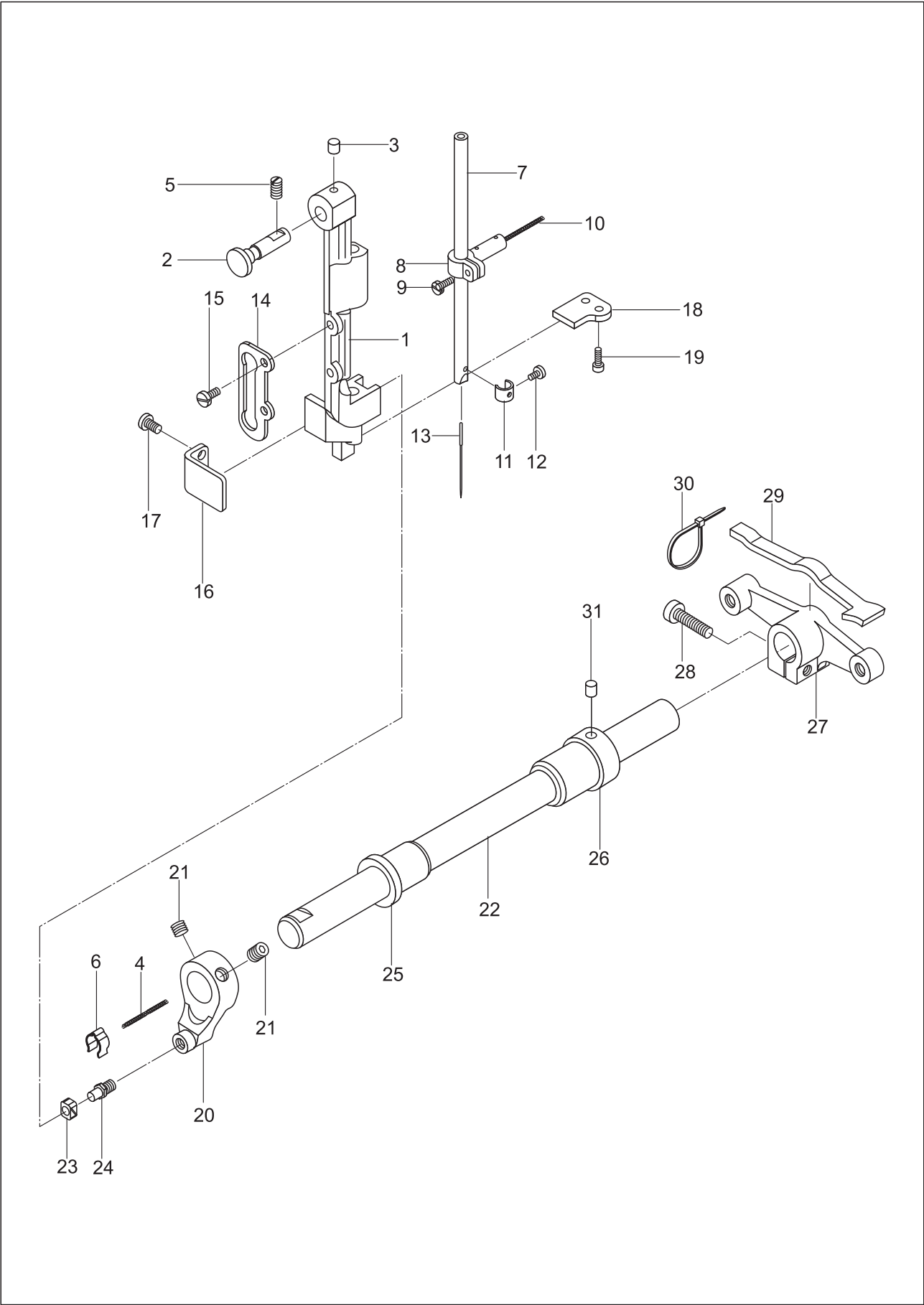
No.	Part Number	Name	Qt.	Remark
1	199WF1-051	Arm shaft	1	
2	92WF1-009	Front bushing, arm shaft	1	
3	199WF1-001	Thread take-up lever	1	
4	199WF1-002	Synchronized pulley assy	1	
5	16WF1-010	Pin shaft	1	
6	50WF1-006	Slide block	1	
7	1WF50-019	Screw	2	SM15/64" × 28
8	92WF1-006	Needle bar link	1	
9	199WF1-003	Oil wick	1	Φ2.5 × 450
10	199WF1-004	Oil wick	1	L=30
11	50WF1-008	Pin	1	
12	199WF1-005	Wick	1	Φ7 × 30
13	92WF1-007	Needle bar crank	1	
14	1WF5-019	Screw	2	SM15/64" × 28
15	50WF1-013	Screw	1	SM9/32" × 28
16	20T2-007	Screw	1	SM9/32" × 28
17	92WF3-014	Feed cam	1	
18	1WF2-010	Screw	2	SM1/4" × 40
19	92WF1-010	Middle bushing, arm shaft	1	
20	199WF1-006	Wick	1	Φ2 × 150
21	92WF3-029	Feed eccentric cam	1	
22	1WF2-010	Screw	2	SM1/4" × 40
23	22WF1-015	Pin	1	
24	92WF1-014	Screw	2	
25	92WF1-034	Teeth belt	1	
26	36WF3-019A	Upper bearing	1	50105 25 × 47 × 12
27	92WF1-011	Bushing	1	
28	57WF-009	Screw	2	M6
29	92WF1-015	Hand wheel	1	
30	42WF3-007	Screw	2	
31	110WF1-017	Lower synchronized pulley	1	
32	22WF1-013	Leafspring	1	
33	22WF1-018	Stop plate	1	
34	22WF1-016	Stop plate	1	
35	22WF1-014	Twist spring	1	
36	22WF1-017	Link	1	
37	103614	Bushing	1	
38	B225001	Pin	1	GB91-86 1.2 × 8

[illegible]

2. Arm shaft & thread take-up mechanisms

No.	Part Number	Name	Qt.	Remark
39	22WF1-052	Screw	1	SM1/4" × 40
40	22WF1-019	Screw	2	
41	22WF1-020	Screw	2	
42	199WF1-020	Push button	1	
43		Retaining ring	1	GB896 5
44	199WF1-021	Spring	1	
45	199WF1-022	Bushing	1	
46	199WF1-023	Wheel	1	
47	18227	Screw	1	SM1/4" × 40
48	199WF1-024	Collar	2	
49	21WF1-022	Screw	1	SM1/4" × 40
50		Bearing	2	50104 20 × 42 × 12
51	199WF1-025	Screw	1	
52	92WF3-030	Retaining block	2	
53	7WF5-017	Screw	1	SM11/64" × 40
54	1WF5-019	Screw	2	SM15/64" × 28
55	92WF2-029	Rubber plug	1	
56	199WF1-026	Washer	2	
57	22WF1-012	Screw	1	

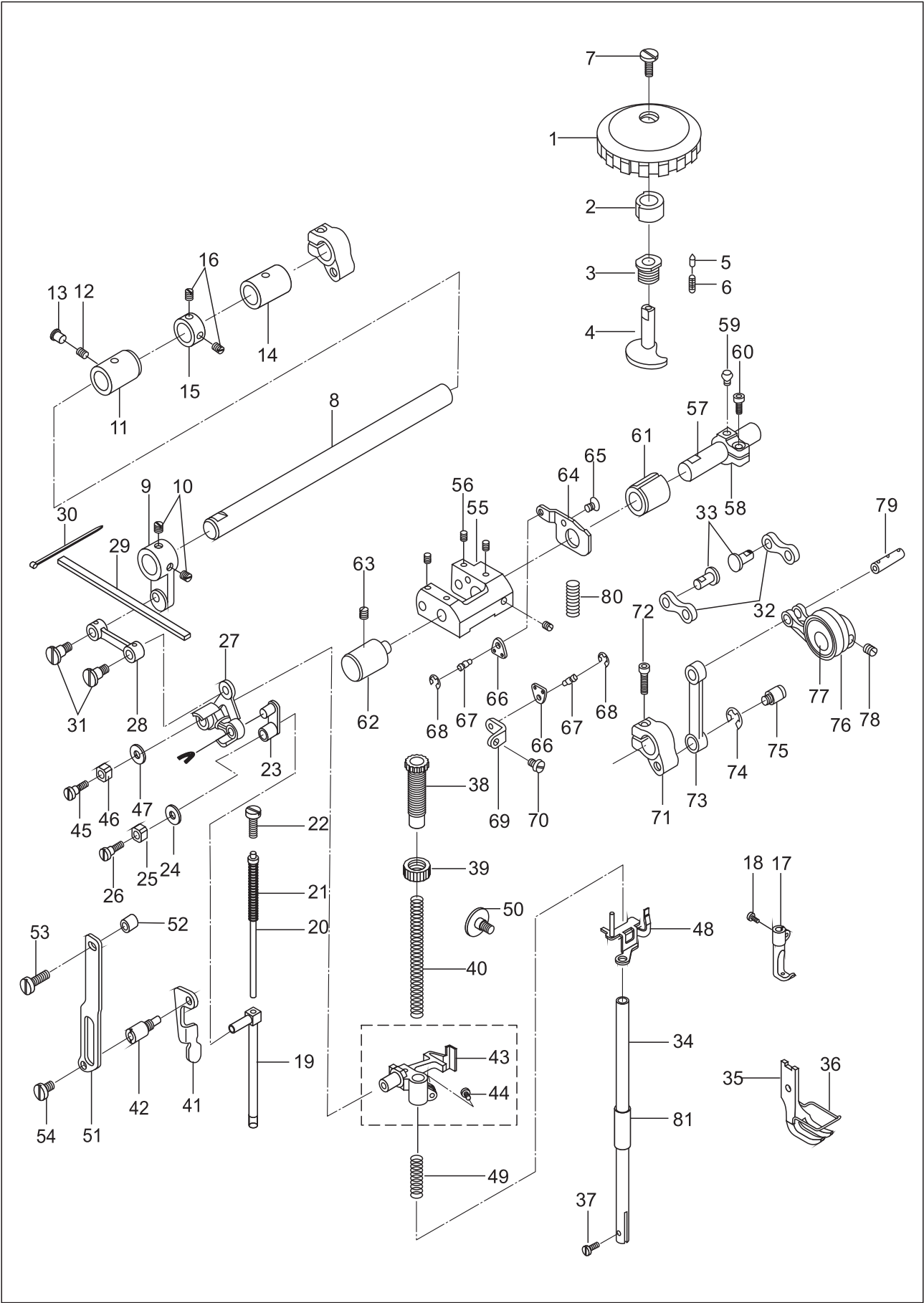
3. Needle bar & swing mechanisms



3. Needle bar & swing mechanisms

No.	Part Number	Name	Qt.	Remark
1	92WF3-008	Needle bar rocking bracket	1	Φ2 × 160
2	92WF3-009	Pin	1	
3	92WF3-007	Oil felt	1	
4	199WF3-001	Oil wick	1	
5	42WF3-007	Screw	1	
6	92WF3-003	Leafspring	1	
7	50WF1-001	Needle bar	1	Φ6 × 20
8	50WF3-003	Needle bar joint	1	
9	36WF3-029B	Screw	1	
10	199WF3-002	Oil wick	1	
11	92WF1-003	Needle bar thread guide	1	
12	22T2-017	Screw	1	SM1/8" × 44
13		Needle	1	DP × 17 24#
14	50WF3-030	Guide rail	1	SM11/64" × 40
15	1WF1-011	Screw	2	
16	92WF3-011	Position plate	1	
17	W01111	Screw	2	
18	92WF3-010	Position plate	1	
19	21WF1-054	Screw	2	
20	92WF3-002A	Crank	1	SM91/64" × 40
21	92WF3-070	Screw	2	
22	92WF3-001	Rocking shaft	1	
23	92WF3-004	Slide block	1	
24	92WF3-002B	Pin	1	
25	92WF3-005	Front bushing	1	
26	92WF3-006	Rear bushing	1	
27	92WF3-012	Crank	1	
28	52WF1-050	Screw	1	
29	92WF3-013	Oil felt	1	
30	2KT-001A	Band	1	
31	92WF3-007	Oil felt	1	

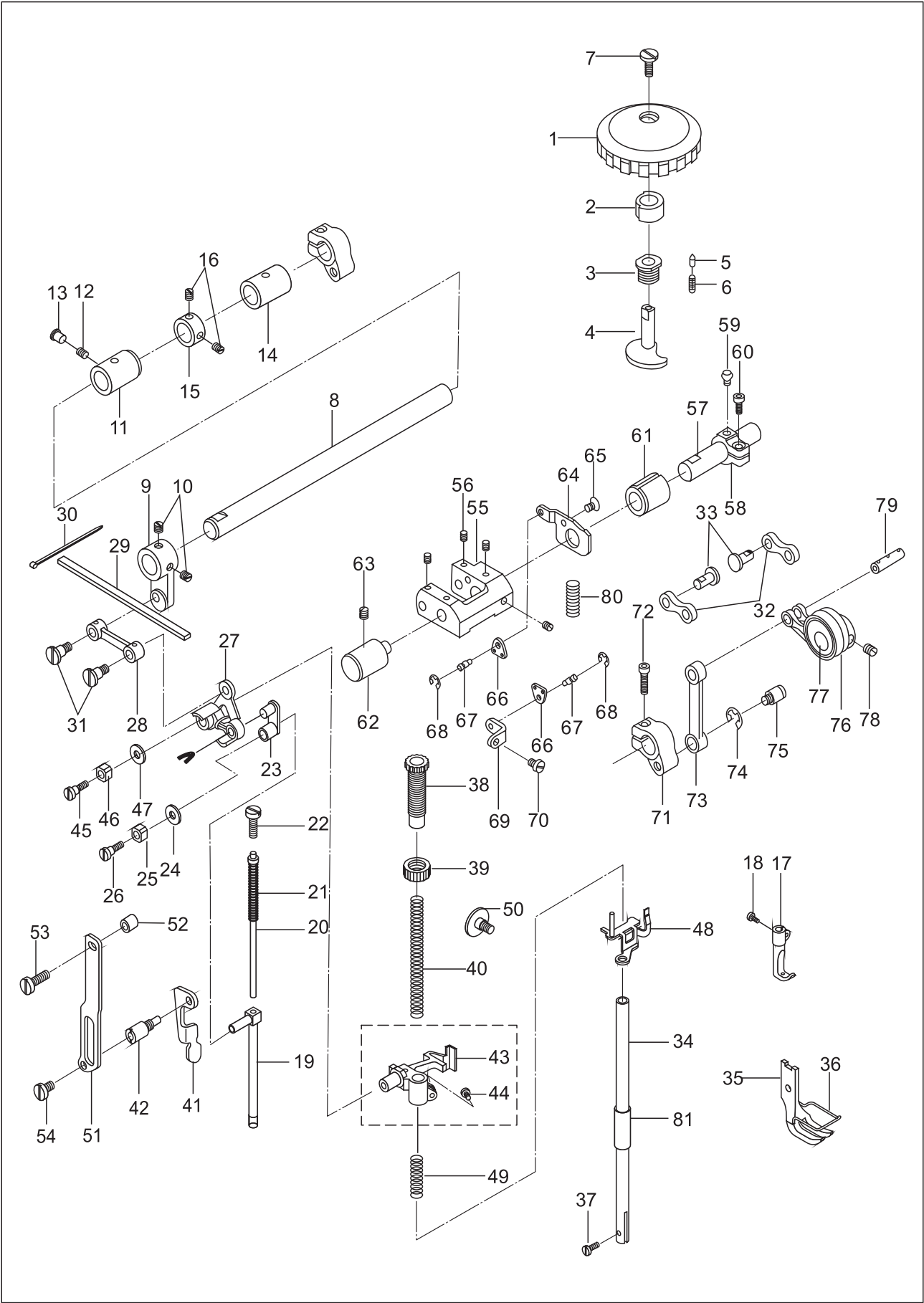
4. Upper feed mechanisms



4. Upper feed mechanisms

No.	Part Number	Name	Qt.	Remark
1	119WF7-017A	Dial	1	
2	119WF7-017B	Bushing	1	
3	119WF7-019	Bushing	1	
4	119WF7-018	Shaft	1	
5	994131	Pin	1	
6	93WF8-002	Spring	1	
7	302395	Screw	1	
8	92WF3-018	Shaft	1	
9	92WF3-019	Crank	1	
10	2KT5-027	Screw	2	SM1/4" × 40
11	199WF4-001	Front bushing	1	
12	1WF5-019	Screw	1	SM15/64" × 28
13	92WF2-029	Rubber plug	1	
14	92WF3-021	Rear bushing	1	
15	92WF3-022	Collar	1	
16	22T3-002B2	Screw	2	SM1/4" × 40
17	92WF3-023	Walking foot	1	
18	50WF3-020	Screw	1	
19	50WF3-018	Walking foot lifting bar	1	
20	92WF3-024	Spring guide bar assy	1	
21	50WF3-032	Spring	1	
22	6K1-048	Regulating screw	1	SM15/64" × 28
23	50WF3-027	Link	1	
24	50WF3-028	Felt	1	
25	50WF3-029	Slide block	1	
26	20T4-006	Screw	1	SM11/64" × 40
27	92WF3-025	Lifting plate	1	
28	92WF3-026	Link	1	
29	92WF3-027	Oil felt	1	
30	2KT7-001A	Band	2	
31	92WF3-028	Screw	2	
32	119WF7-011	Link	2	
33	994118	Pin shaft	2	
34	22WF3-005	Presser bar	1	
35	92WF4-001	Presser foot	1	
36	92WF4-002	Finger guard	1	
37	22WF3-014	Screw	1	SM9/64" × 40
38	02WF4-003	Regulating bolt	1	SM1/2" × 28
39	1KT4-002	Nut	1	SM1/2" × 28
40	92WF4-023	Spring	1	
41	92WF4-004	Foot lift lever	1	
42	92WF4-005	Lift lever shaft	1	

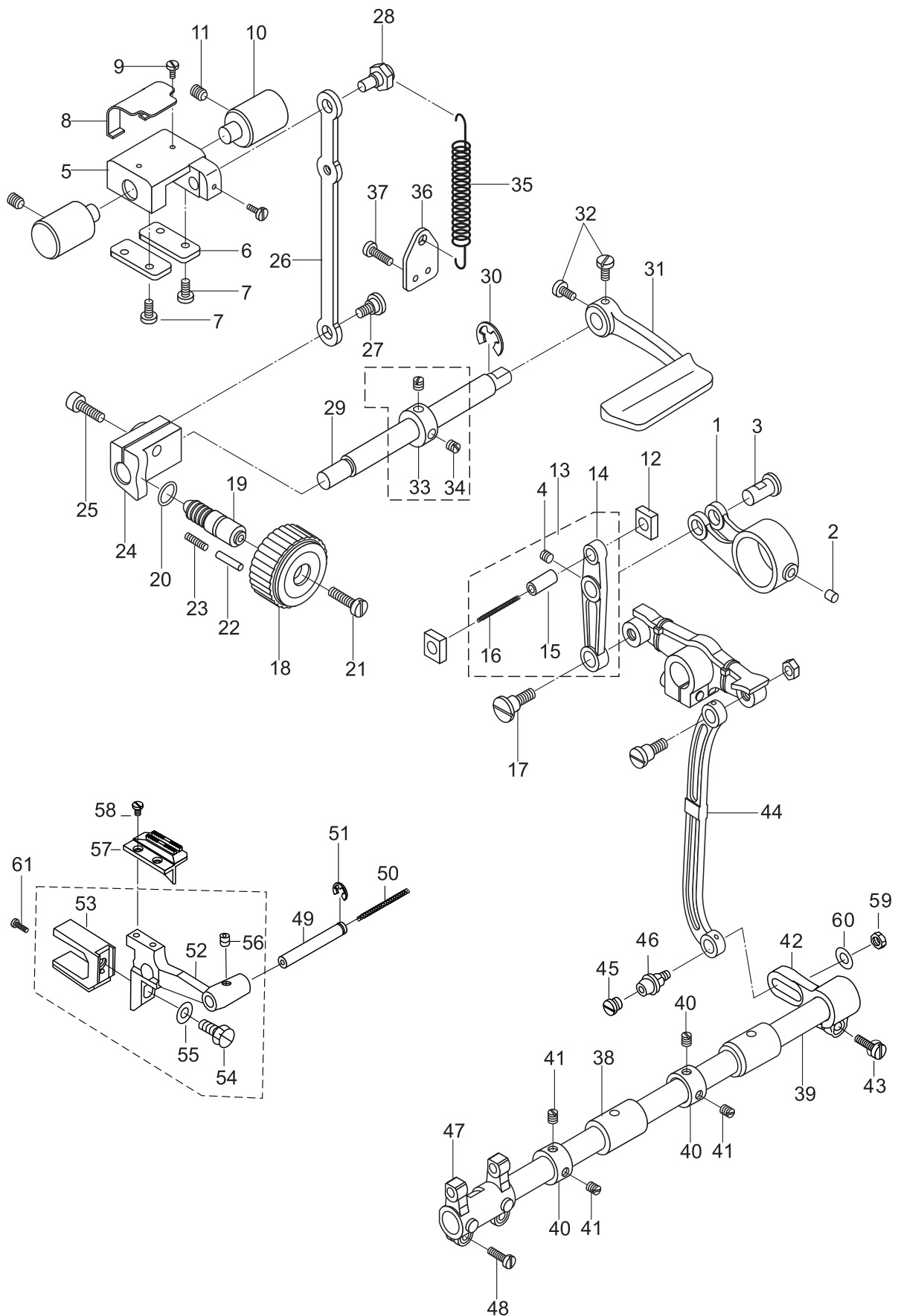
4. Upper feed mechanisms



4. Upper feed mechanisms

No.	Part Number	Name	Qt.	Remark
43	92WF4-006	Bracket	1	SM11/64" × 40
44	1WF1-011	Screw	1	
45	92WF4-007	Screw	1	
46	50WF3-029	Slide block	1	
47	92WF4-008	Washer	1	
48	92WF4-009	Releasing plate	1	
49	50WF4-013	Spring	1	
50	50WF4-014	Screw	1	
51	92WF4-010	Guide plate	1	
52	92WF4-011	Washer	1	
53	60WF4-003	Screw	1	SM15/64" × 28
54	52WF3-027	Screw	1	SM15/64" × 28
55	119WF7-001	Adjusting bracket	1	
56	6K2-043	Screw	4	
57	119WF7-003	Shaft	1	
58	119WF7-004	Crank	1	
59	119WF7-005	Screw	1	
60	72WF5-021	Screw	1	
61	119WF7-002	Bushing	1	
62	92WF3-037	Shaft	1	
63	1WF5-019	Screw	1	SM15/64" × 28
64	119WF7-012	Retaining plate	1	GB/T819.2 M5 × 8
65		Screw	1	
66	119WF7-014	Connecting plate	2	
67	119WF7-015	Screw	2	
68		Retaining ring	2	
69	119WF7-016	Hanger	1	
70	50WF3-089	Screw	1	
71	119WF7-009	Crank	1	
72	80WF6-025	Screw	1	
73	119WF7-008B	Link	1	GB896 8
74		Retaining ring	1	
75	119WF7-010	Screw	1	
76	119WF7-008A	Link	1	
77	119WF7-007	Needle bearing	1	
78	21WF1-022	Screw	1	
79	119WF7-008C	Pin shaft	1	
80	119WF7-013	Spring	1	
81	50WF4-001	Bushing	1	

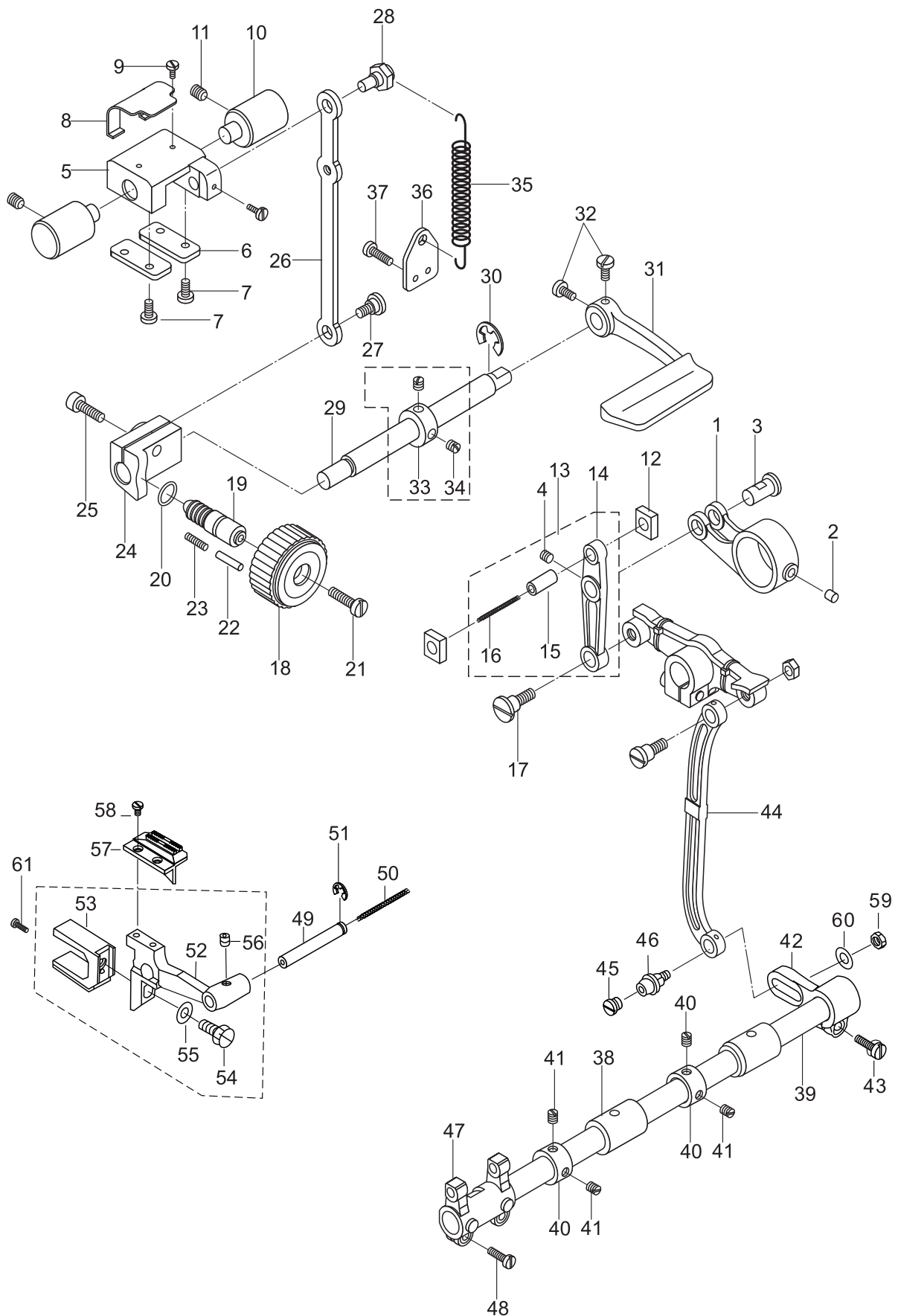
5. Lower feed, reverse and feed regulating



5. Lower feed, reverse and feed regulating

No.	Part Number	Name	Qt.	Remark
1	92WF3-031	Feed link	1	M5
2	92WF3-032	Oil felt	1	
3	92WF-033	Pin	1	
4	6K2-043	Screw	1	
5	92WF3-034	Reverse feed bracket	1	
6	92WF3-035	Retaining plate	2	SM9/64" × 40
7	1WF1-011	Screw	4	
8	92WF3-036	Presser plate	1	
9	16WF1-059	Screw	2	
10	92WF3-037	Shaft	2	
11	1WF5-019	Screw	2	SM15/64" × 28
12	92WF3-038	Slide block	2	Φ1.5 × 35
13	92WF3-039	Feed rocking bar assy	1	
14	92WF3-039A	Feed rocking bar	1	
15	92WF3-039B	Pin	1	
16	199WF3-003	Oil wick	1	
17	92WF3-040	Screw	1	SM3/16" × 28
18	92WF3-041	Stitch regulating dial	1	
19	92WF3-042	Screw	1	
20	92WF3-043	Seal ring	1	
21	92WF3-044	Screw	1	
22	17WF4-035	Pin	1	M6
23	50WF3-058	Spring	1	
24	92WF3-045	Holder	1	
25	6K2-024	Screw	1	
26	92WF3-046	Link	1	
27	92WF3-047	Screw	1	GB896 9
28	92WF3-048	Eccentric pin	1	
29	92WF3-049	Reverse feed lever shaft	1	
30	92WF3-071	Retaining ring	1	
31	92WF3-050	Reverse feed lever	1	
32	92WF3-051	Screw	2	SM1/4" × 40
33	92WF3-052	Collar	1	
34	22T3-002B2	Screw	2	
35	92WF3-053	Spring	1	
36	92WF3-054	Spring hook	1	
37	1WF3-009	Screw	2	SM11/64" × 40
38	92WF3-021	Feed shaft bushing	2	

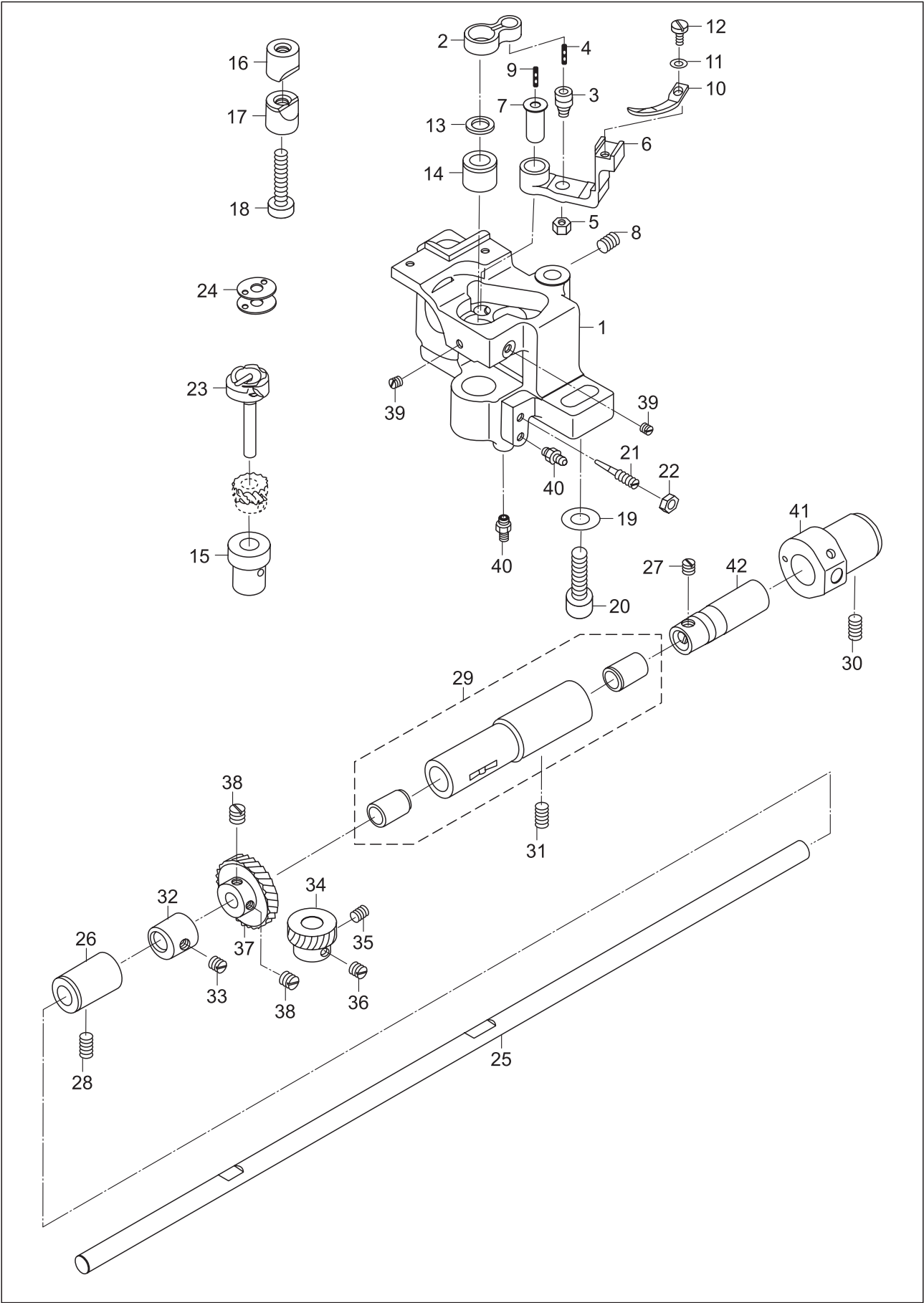
5. Lower feed, reverse and feed regulating



5. Lower feed, reverse and feed regulating

No.	Part Number	Name	Qt.	Remark
39	92WF3-055	Feed shaft	1	
40	92WF3-022	Feed shaft collar	2	
41	22T3-002B2	Screw	4	SM1/4" × 40
42	119WF3-001	Driving crank	1	
43	41WF3-018	Screw	1	SM3/16" × 28
44	92WF3-058	Link	1	
45	119WF3-003	Screw	1	
46	119WF3-002	Screw	1	
47	92WF3-060	Feed crank	1	
48	1WF3-009	Screw	2	SM11/64" × 40
49	92WF3-061	Pin	1	
50	199WF3-004	Oil wick	1	Φ2.5 × 120
51	92WF3-072	Retaining ring	1	GB896 5
52	199WF3-005	Feed dog support	1	
53	199WF3-006	Lifting fork	1	
54	42WF1-008	Screw	1	SM15/64" × 28
55	41WF1-009	Washer	1	
56	80WF6-036	Screw	1	
57	199WF3-007	Feed dog	1	
58	199WF3-008	Screw	2	
59	22WF3-004	Nut	1	
60	71WF3-058	Washer	1	
61	13WF6-008	Screw	1	

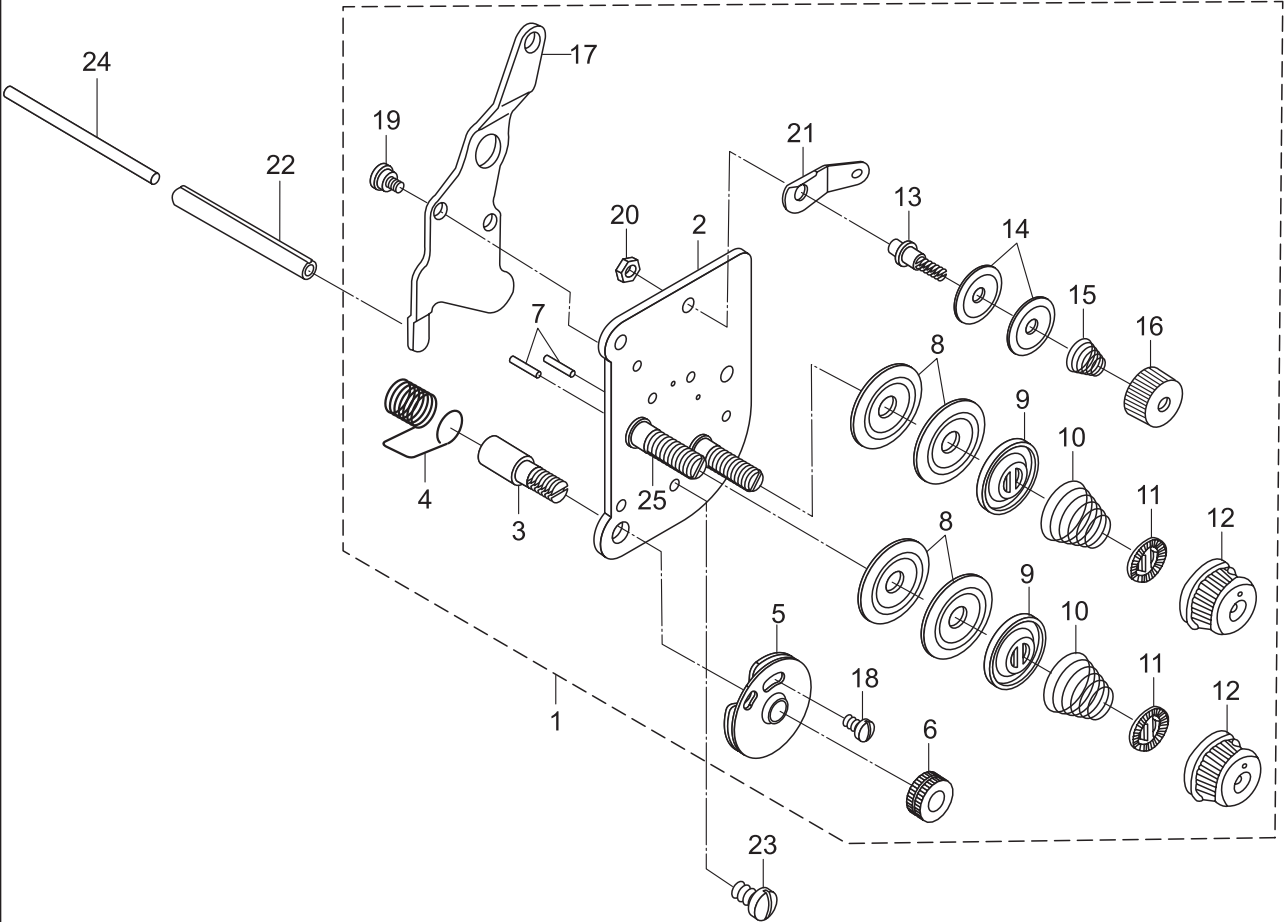
6. Lower shaft and rotating hook



6. Lower shaft and rotating hook

No.	Part Number	Name	Qt.	Remark
1	199WF1-027	Rotating hook base	1	
2	199WF1-028	Thread opener link	1	
3	199WF1-029	Pin	1	
4	199WF1-030	Oil wick	1	Φ3×15
5	27WF4-008	Nut	1	
6	199WF1-031	Thread opener supporter	1	
7	199WF1-032	Shaft	1	
8	52WF2-030	Screw	1	SM11/64"×40
9	199WF1-033	Oil wick	1	Φ3×20
10	199WF1-034	Thread opener	1	
11	36WF1-042	Washer	1	
12	21WF2-038	Screw	1	SM9/64"×40
13	199WF1-035A	Adjusting washer	1	
14	199WF1-036	Upper bushing, rotating hook	1	
15	199WF1-037	Lower bushing, rotating hook	1	
16	199WF1-038	Block A	1	
17	199WF1-039	Block B	1	
18	1WF2-060	Bolt	1	
19	199WF1-040	Washer	1	
20		Bolt	1	GB/T 70.1 M8×40
21	92WF1-031	Screw	1	
22	27WF4-008	Nut	1	
23	199WF1-041	Rotating hook assy	1	
24	1WF2-065	Bobbin	1	
25	199WF1-042	Lower shaft	1	
26	199WF1-043	Front bushing, lower shaft	1	
27	1WF2-009	Screw	1	SM1/4"×40
28	17WF4-016	Screw	1	SM15/64"×28
29	199WF1-044	Middle bushing assy	1	
30	17WF4-016	Screw	1	SM15/64"×28
31	17WF4-016	Screw	1	SM15/64"×28
32	199WF1-045	Feed dog lifting cam	1	
33	661012	Screw	1	SM15/64"×28
34	199WF1-046	Rotating hook shaft gear	1	
35	21WF1-033	Screw	1	SM1/4"×40
36	21WF1-043	Screw	1	SM1/4"×40
37	199WF1-047	Lower shaft gear	1	
38	1WF2-010	Screw	2	SM1/4"×40
39	36WF5-021	Screw	2	SM11/64"×40
40	199WF1-048	Oil tube connector	2	
41	199WF1-049	Bushing	1	
42	199WF1-050	Shaft	1	

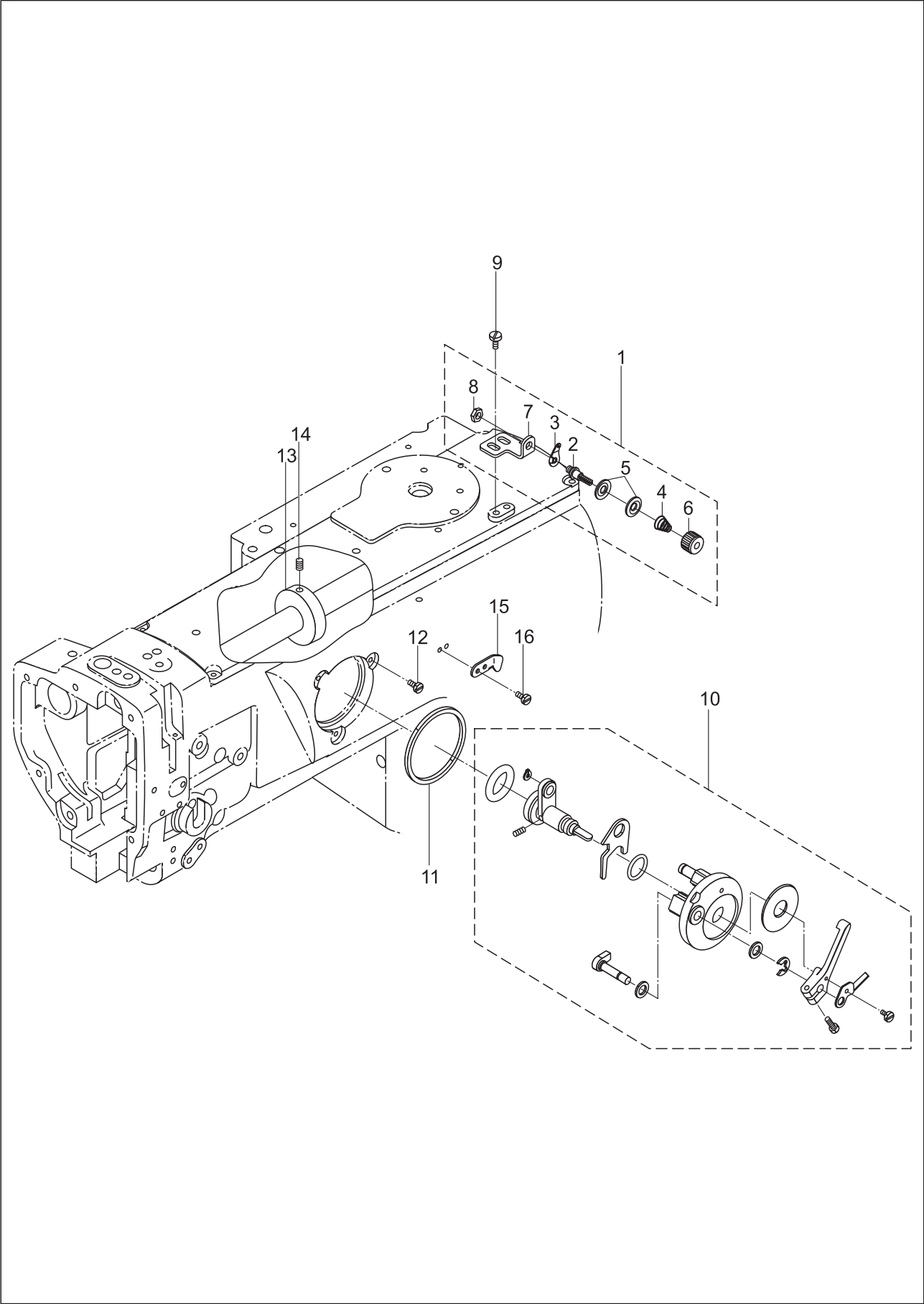
7. Tension adjusting components



7. Tension adjusting components

No.	Part Number	Name	Qt.	Remark
1	119WF2-005	Thread tenssion assy	1	
2	119WF2-005A	Setting plate	1	
3	92WF2-018C	Thread take-up spring pin	1	
4	92WF2-018B	Thread take-up spring	1	
5	16WF2-046A8	Plate	1	
6	16WF2-046A11	Thumb nut	1	
7	21WF4-024	Thread release pin	1	
8	22T1-012F5	Tension disc	2	
9	22T1-012F4	Plate	2	
10	21WF4-031	Spring	1	
11	153209	Retainer	1	
12	21WF4-030	Nut	1	
13	92WF2-021A1	Bolt	1	
14	50WF2-035A4	Tension disc	2	
15	50WF3-035A3	Spring	1	
16	50WF2-035A5	Thumb nut	1	
17	119WF2-005B	Plate	1	
18	16WF2-046A9	Screw	1	
19	16WF2-046A15	Screw	2	
20	13WF2-052	Nut	1	
21	50WF2-035A2	Thread guide	1	
22		Pin	1	GB/T 879.1 6×50
23	1WF1-011	Screw	1	SM11/64"×40
24	92WF2-020	Pin	1	
25	21WF4-020	Bolt	1	

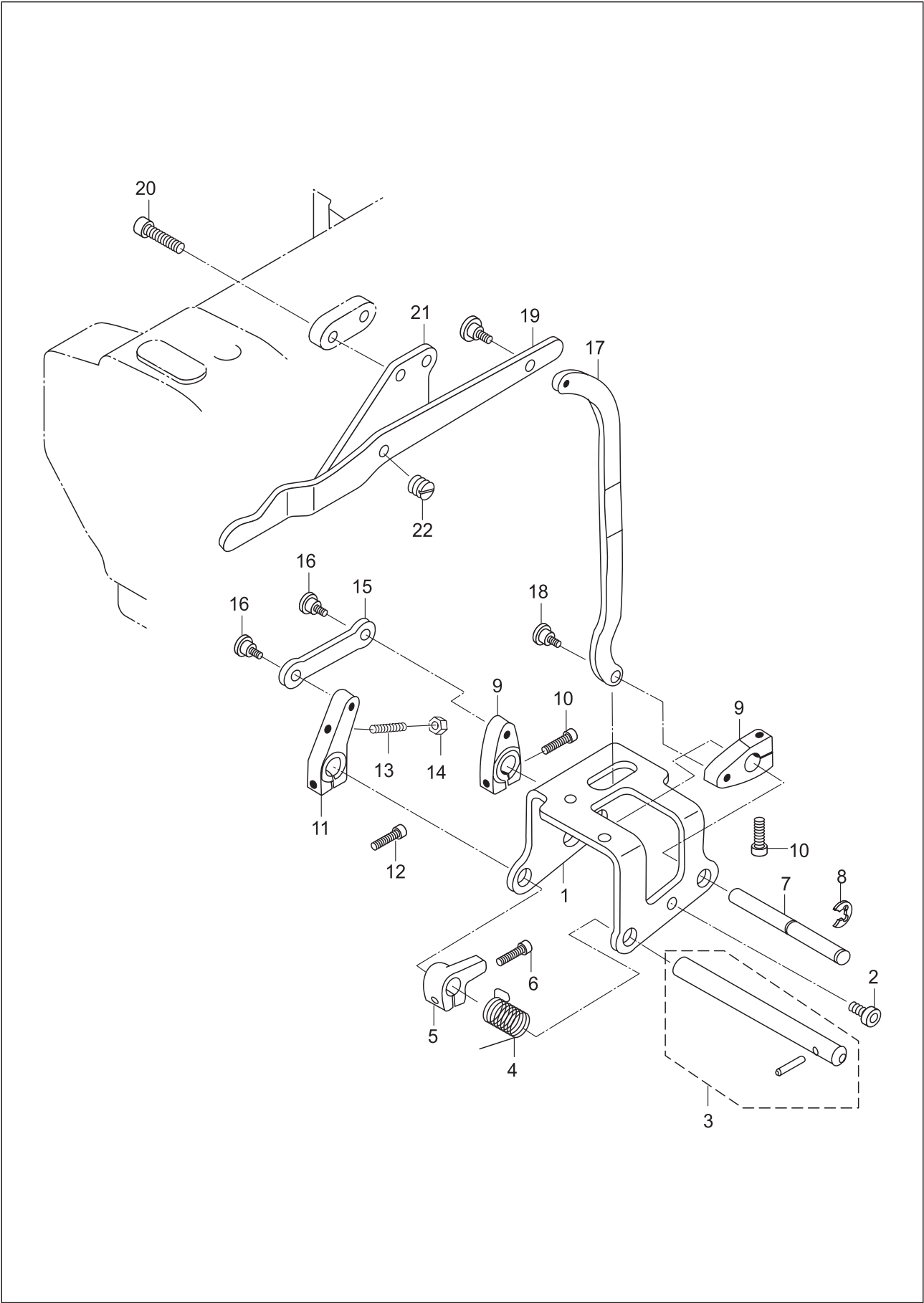
8. Winding & small tension components



8. Winding & small tension components

No.	Part Number	Name	Qt.	Remark
1	92WF2-021	Small tension assy	1	
2	92WF2-021A	Bolt	1	
3	50WF2-035A2	Thread guide	1	
4	50WF2-035A3	Spring	1	
5	50WF2-035A4	Tension disc	2	
6	50WF2-035A5	Thumb nut	1	SM11/64" × 40
7	92WF2-021B	Setting plate	1	
8	2KT5-026	Nut	1	SM11/64" × 40
9	13WF2-040	Screw	2	M4
10	92WF2-025	Thread winding assy	1	
11	92WF2-026	Friction ring	1	
12	92WF2-027	Screw	3	SM11/64" × 40
13	92WF2-035	Friction wheel	1	
14	6K2-043	Screw	2	
15	92WF2-036	Cutter	1	
16	36WF2-031	Screw	2	

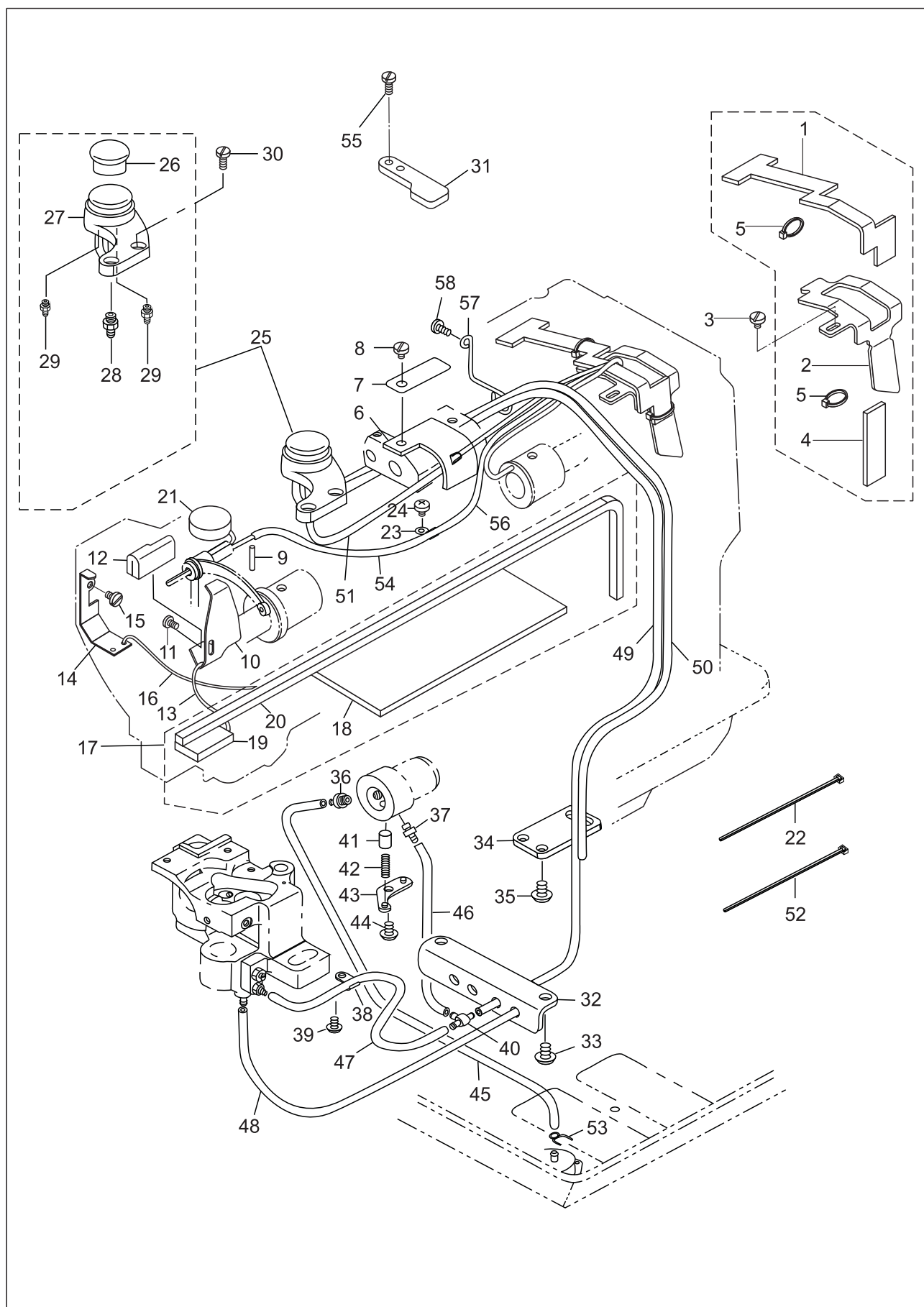
9. Knee lifting mechanisms



9. Knee lifting mechanisms

No.	Part Number	Name	Qt.	Remark
1	199WF5-001	Bracket	1	M6
2	52WF5-003	Screw	3	
3	199WF5-002	Shaft assy	1	
4	199WF5-003	Twist spring	1	
5	199WF5-004	Crank	1	
6	B188004	Screw	1	GB70-85 M5×6
7	199WF5-005	Shaft	1	
8		Retaining ring	1	
9	199WF5-006	Crank	2	GB70-85 M5×6
10	B188004	Screw	2	
11	199WF5-007	Driving crank	1	
12	B188004	Screw	1	GB70-85 M5×6
13	199WF5-008	Bolt	1	
14	72WF5-022	Nut	1	
15	199WF5-009	Link	1	M5
16	92WF4-016	Screw	2	
17	199WF5-010	Link	1	
18	92WF4-016	Connecting screw	2	
19	92WF4-013	Knee lift lever	1	
20	72WF-009	Screw	1	
21	92WF4-012	Settting plate	1	
22	92WF4-014	Screw	1	

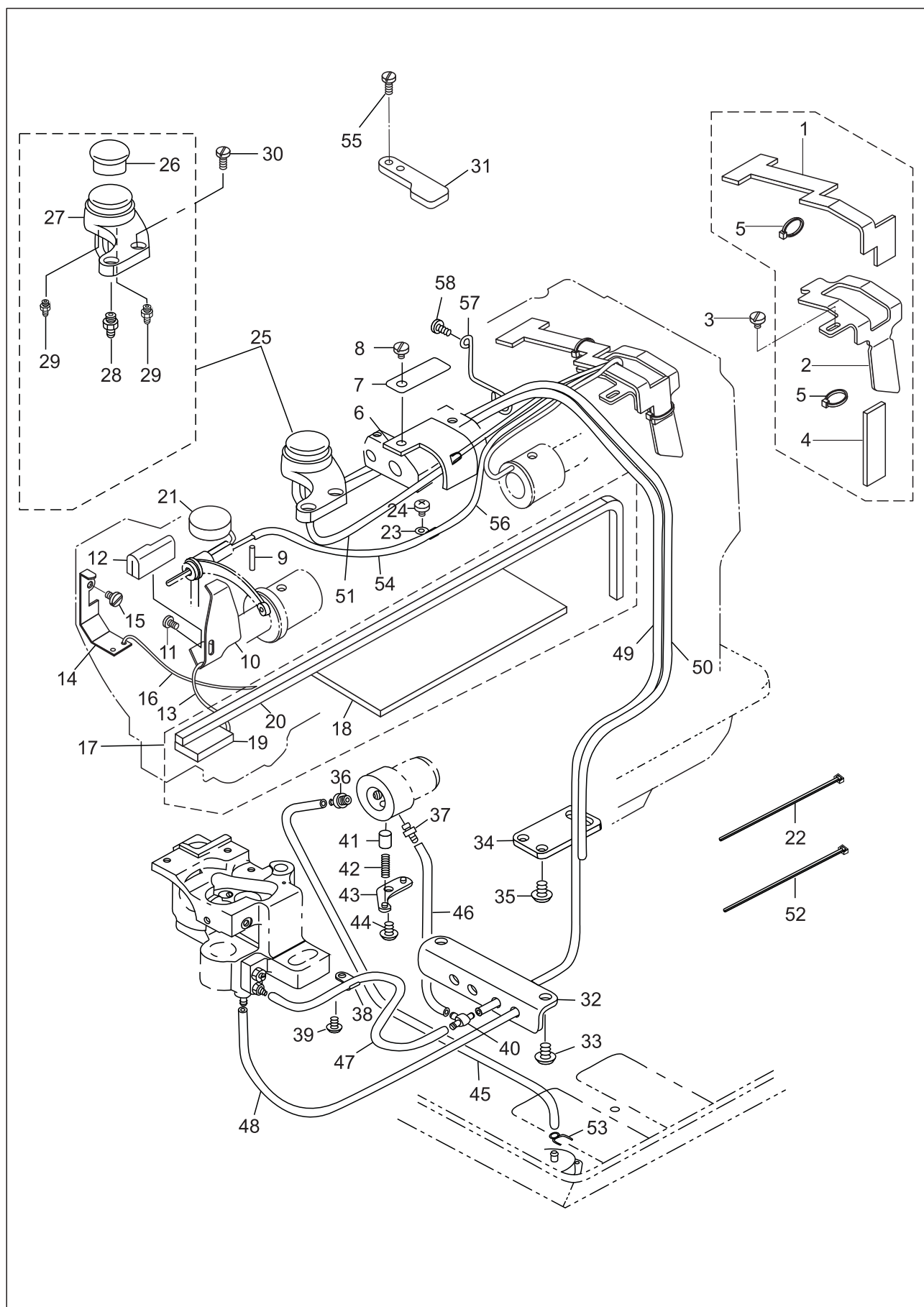
10. Lubrication components



10. Lubrication components

No.	Part Number	Name	Qt.	Remark
1	92WF5-001	Oil felt	1	SM11/64" × 40
2	92WF5-002	Bracket	1	
3	1WF1-011	Screw	1	
4	92WF5-003	Oil felt	1	
5	2KT7-001A	Band	2	
6	119WF5-003	Oil felt	1	
7	119WF5-001	Plate	1	SM9/64" × 40
8	119WF5-002	Screw	1	
9	92WF5-010	Oil felt	1	
10	92WF5-011	Oil shield	1	
11	16WF1-059	Screw	1	
12	92WF5-012	Oil felt	1	Φ2 × 250
13		Oil wick	1	
14	92WF5-013	Oil shield	1	
15	36WF1-031D	Screw	1	
16		Oil wick	1	
17	92WF5-014	Oil felt assy	1	SM11/64" × 40
18	92WF5-014A	Felt	1	
19	92WF5-014B	Felt	1	
20	92WF5-014C	Oil wick	1	
21	92WF5-009	Felt	1	
22	2KT7-001A	Band	1	
23	1WF6-036	Clip	1	SM11/64" × 40
24	17WF1-020	Screw	1	
25	199WF6-001	Oil box assy	1	
26	199WF6-001A	Oil window	1	
27	199WF6-001B	Oil box	1	
28	199WF6-002	Connector	1	SM11/64" × 40
29	199WF1-048	Connector	2	
30	1WF5-042	Screw	2	
31	92WF5-004	Plate	1	
32	199WF6-003	Bracket	1	
33	27WF5-005	Screw	2	SM15/64" × 28
34	199WF6-004	Supporter	1	
35	27WF5-005	Screw	2	SM15/64" × 28
36	199WF6-005	Connector	1	
37	199WF1-048	Connector	1	
38	1WF6-036	Clip	1	

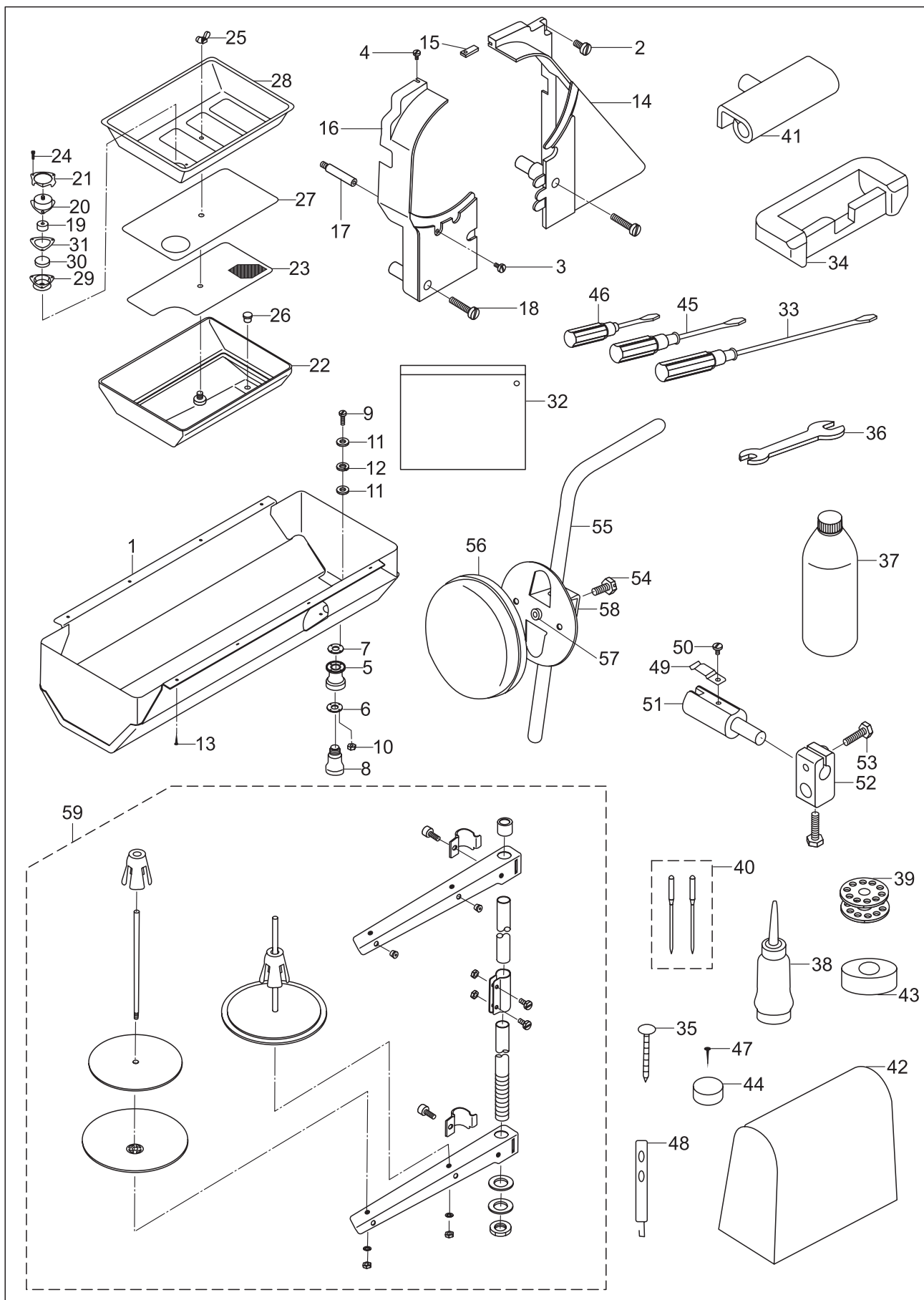
10. Lubrication components



10. Lubrication components

No.	Part Number	Name	Qt.	Remark
39	17WF1-020	Screw	1	SM11/64" × 40
40	1WF6-029	Tube connector	1	
41	199WF6-007	Plug	1	
42	199WF6-008	Spring	1	
43	199WF6-009	Plate	1	
44	17WF1-020	Screw	1	SM11/64" × 40
45	199WF6-010	Oil tube	1	Φ5 × 1 L=370
46	199WF6-011	Oil tube	1	Φ5 × 1 L=80
47	199WF6-012	Oil tube	1	Φ5 × 1 L=220
48	199WF6-013	Oil tube	1	Φ5 × 1 L=300
49	199WF6-014	Oil tube	1	Φ5 × 1 L=610
50	199WF6-015	Oil tube	1	Φ5 × 1 L=500
51	199WF6-016	Oil tube	1	Φ5 × 1 L=200
52	2KT5-001A	Band	11	
53	199WF6-017	Clip	1	
54	199WF6-018	Oil tube	1	Φ5 × 1 L=225
55	W01111	Screw	2	
56	199WF6-019	Oil wick	1	Φ5 × 480
57	199WF6-020	Setting hook	1	
58	36WF4-017	Screw	1	

11. Accessories



11. Accessories

No.	Part Number	Name	Qt.	Remark
1	199WF7-001	Big oil pan	1	
2	21WF3-012	Screw	1	SM15/64" × 28
3	42WF2-008	Screw	1	SM11/64" × 40
4	2KT6-012	Screw	1	SM11/64" × 40
5	92WF6-018	Oil bolt	1	
6	92WF6-020	Washer	1	
7	92WF6-019	Seal	1	
8	92WF6-027	Waste oil pot	1	
9		Screw	4	GB/T818 M3 × 14
10		Nut	4	GB/T6170 M3
11	92WF6-023	Spacer	8	
12		Washer	4	GB/T95 M3
13		Wood screw	8	GB99 2.5 × 16
14	92WF6-013B	Belt cover	1	
15	92WF6-013C	Connector	1	
16	92WF6-013A	Belt cover	1	
17	92WF6-016	Supporting pole	1	
18	1WF2-060	Screw	2	SM15/64" × 28
19	199WF7-002	Filter element	1	
20	199WF7-003	Cap	1	
21	199WF7-004	Fix piece	1	
22	199WF7-005	Small oil pan	1	
23	199WF7-006	Supporter	1	
24		Screw	3	GB/T65 M2 × 10
25		Screw	1	GB62 M5
26	199WF7-007	Plug	1	
27	199WF7-008	Filter	1	
28	199WF7-009	Tray	1	
29	199WF7-010	Case	1	
30	199WF7-011	Magnet	1	
31	199WF7-012	Seal	1	
32	33TF-010	Accessories bag	1	
33	33TF-012	Screwdriver	1	
34	22T9-007F2	Hinge cushion	1	
35		Nail	8	3/4
36	92WF6-028	Wrench	1	
37	1F-009	Big oil pot	1	
38	33TF-011	Small oil pot	1	

This diagram illustrates the exploded view of a mechanical assembly, likely a pump or motor unit. The components are numbered 1 through 59, and various tools are shown for assembly.

Key Components and Tools:

- 1:** Main housing or base.
- 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32:** Various small parts, including screws, washers, and internal components.
- 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48:** Tools and additional parts, including a wrench, a bottle, a pump head, and a motor unit.
- 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59:** Larger components, including a motor unit, a pump head, and a base.

The diagram shows the assembly process, with parts 1 through 59 being assembled into the main unit. Tools 33 through 48 are used for the assembly process.

11. Accessories

No.	Part Number	Name	Qt.	Remark
39	1WF2-065	Bobbin	3	DP × 17 24#
40		Needle	3	
41	22T9-007F1	Hinge	2	
42	13F-002	Machine head cover	1	
43	92WF6-025	Cushion	1	SG162 L=19
44	92WF6-026	Oil felt	4	
45	33TF-013	Screwdriver	1	
46	33TF-014	Screwdriver	1	
47		Nail	1	SM9/64" × 40
48	92WF2-037	Thread finger	1	
49	199WF7-014	Leafspring	1	
50	21WF7-015	Screw	1	
51	199WF7-015	Connector	1	GB/T5781 M6 × 25
52	199WF7-016	Crank	1	
53		Screw	2	
54	22T9-003B7	Screw	1	
55	199WF7-017	Lever	1	
56	22T9-003B8	Cushion	1	
57	22T9-003B5	Connector	1	
58	22T9-003B6	Holder	1	
59	33TF-019	Thread stand assy	1	