TYPICAL

GC20665L14D

1-NEEDLE DIRECT DRIVE COMPOUND FEED LOCKSTITCH SEWING MACHINE

GC20666L14D

2-NEEDLE DIRECT DRIVE COMPOUND FEED LOCKSTITCH SEWING MACHINE

OPERATION INSTRUCTION / PARTS MANUAL / SYSTEM SERVICE MANUAL

□ Please don't adjust and repair the machine by non–professionals,except adjusting stitch.

□ Specifications subject to change without notice

TYPICAL SEWING MACHINE WANPING MACHINERY CO.,LTD.

ADD: WANPING TOWN, WUJIANG CITY, JIANGSU
       PROVINCE, CHINA
TEL: +86–512–63391278
FAX: +86–512–63391371
POST. CODE: 215223
Http://www.typicalwpchina.com
E–mail:export@typicalwpchina.cn

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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.

2. Main specifications

Model	GC20665L14D	GC20666L14D
Max sewing speed	2500s.p.m	2200s.p.m
Max stitch length	9mm	
Needle bar stroke	36mm	
Needle	DP×17(Nm125~Nm180) 23#	
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	Direct drive	

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, then insert the felt ④ in the cushion ②.
2. Setting of oil pan
Fix oil pan ⑤ under the working table by eight wooden screws as per illustration.
3. Install knee lift connector ⑥, crank ⑩ and lever ⑧ to the knee lift shaft ⑨ properly.
4. Adjust the position of the cushion by screw ⑦, ⑪ and⑫

7mm

Table

一致
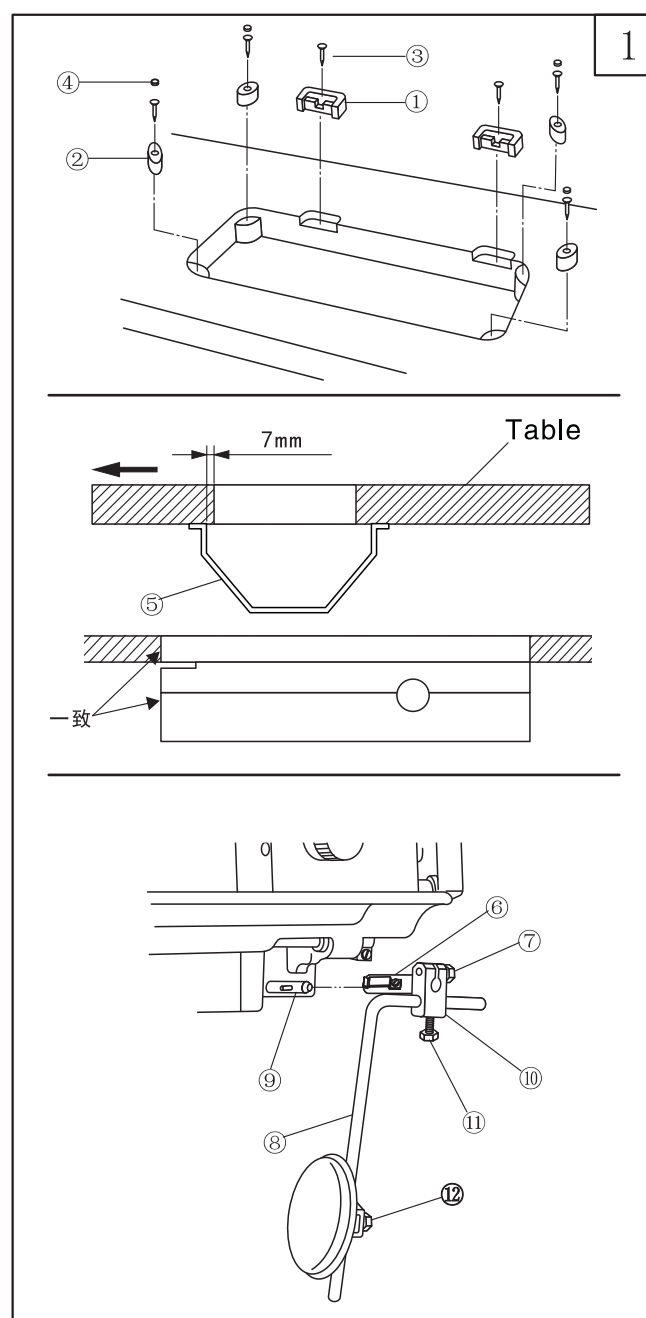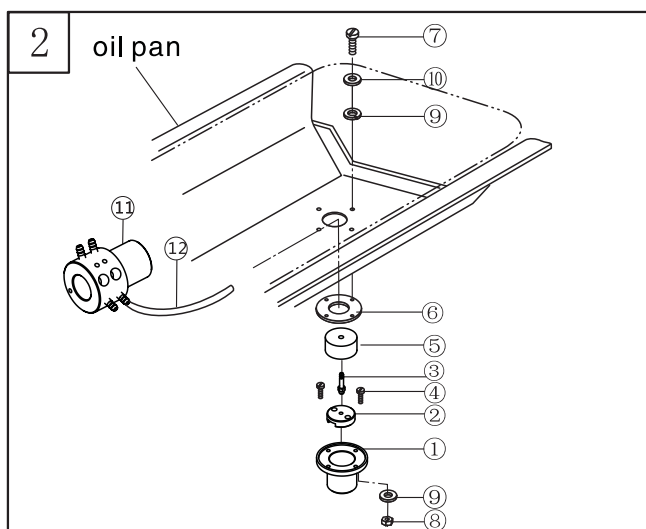
2   oil pan

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

1.Install oil nozzle ③ on the oil post ②, and fix the oil post on the oil hopper ①, insert the oil felt ⑤ on the oil nozzle

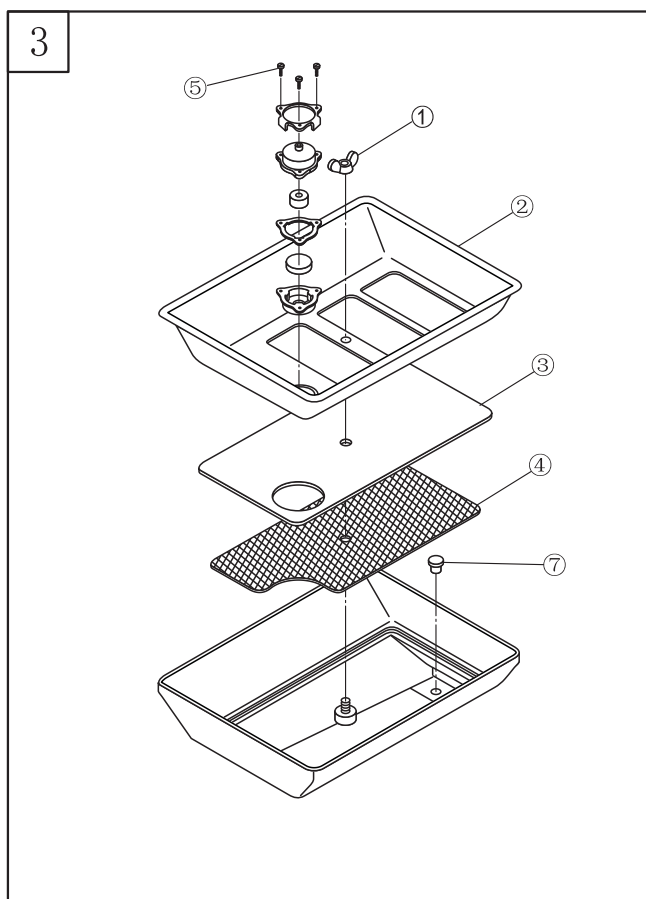2.Install the oil hopper ①, oil seal ⑥ on the oil pan, and fixed by screw ⑦, washer ⑧,⑨ and nut ⑩.

3.Connect the oil tube ⑫ with oil nozzle ③.

3

5. Cleaning the small oil pan (Fig.3)

1.Remove oil tube off the small oil pan.

2.Take off wing nut ①, tray ②, filter ③ and supporter ④, clean the small oil pan.

3.Remove screw ⑤ and clean

4.Take off plug ⑦ from small oil pan to discard waste oil, after drained, insert the plug again.

5.Fix the filter on the oil tray ② by screw ⑤

6.Then put supporter ④, filter ③ and tray ② back in sequence, fix them with wing nut ① on the small oil pan.

7.Insert oil tube into the small oil pan and fix with clip.

6. Lubrication (Fig.4)

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.

5
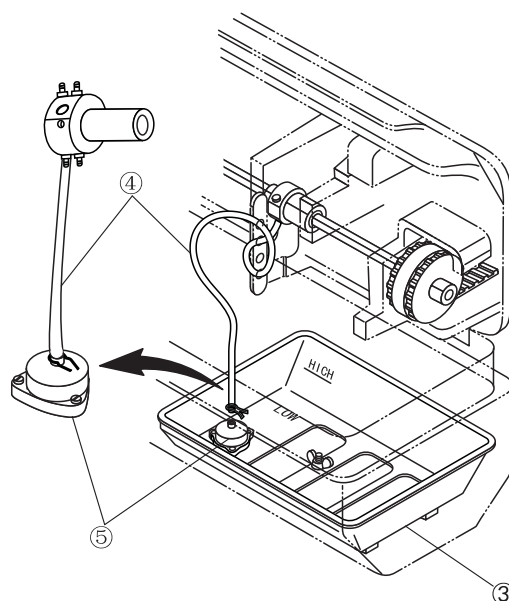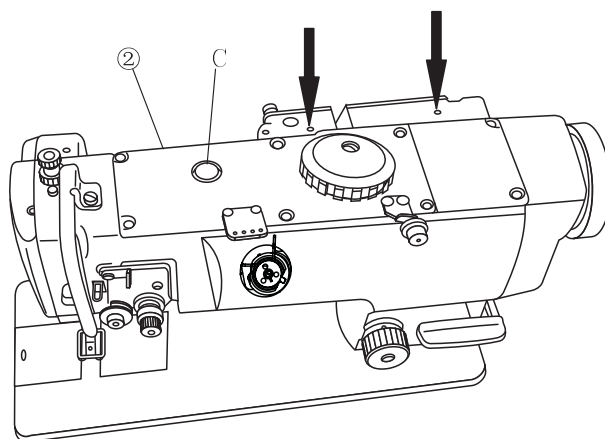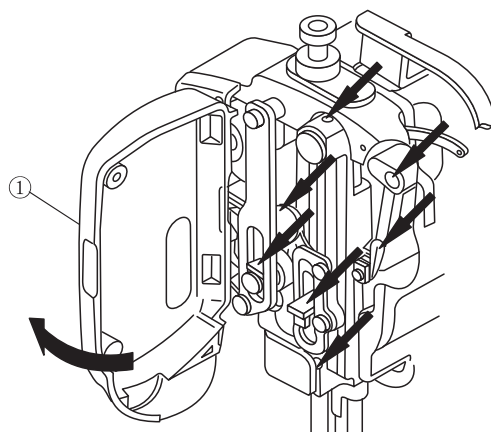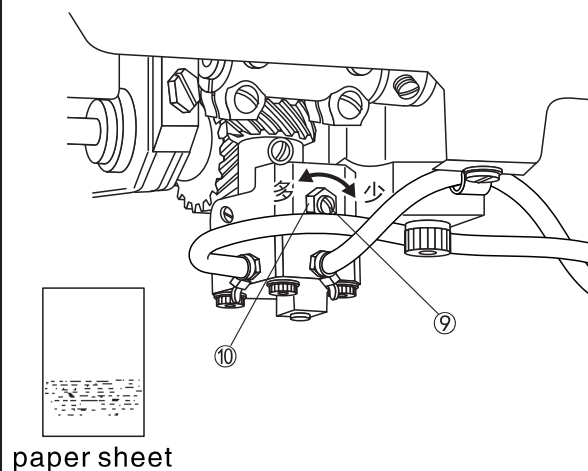
paper sheet

7. Adjusting the hook oil amount (Fig.5)

1.Loosen the nut ⑩ and turn the screw ⑨ to adjust the hook oil amount, turn the screw clockwise to decrease the oil amount, turn the screw counterclockwise to increase the amount

2.Put the paper sheet near the hook about 5 seconds, if shows as picture, that means the oil amount is suitable.

6

1-needle

long groove leftward

2-needle
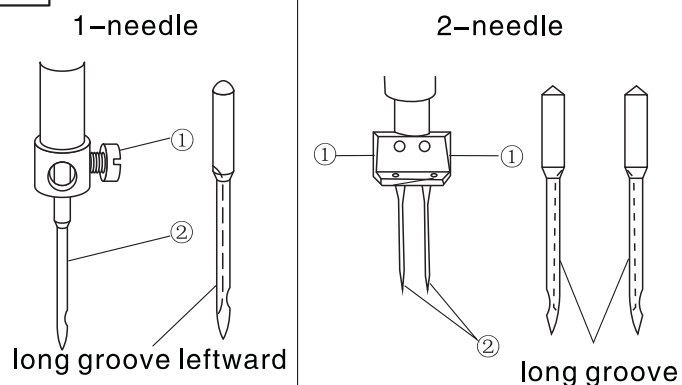
long groove

8. Setting the needle (Fig.6)

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

9. Threading the bobbin (Fig.7)

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 turn in direction of the arrow when you draw the thread.
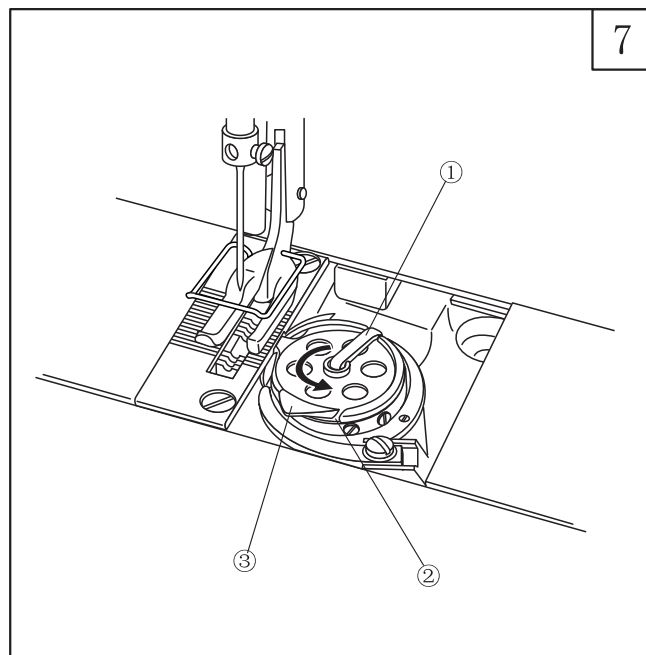
10. Installing the thread winding guide (Fig.8)

Mount the bobbin thread tension ① onto the top cover with setscrew ②.
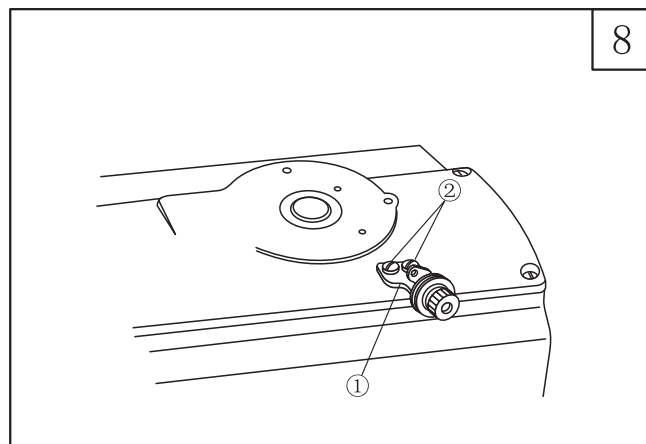
11. Winding bobbin thread (Fig.9)

1.Thread in sequence ①~④, then coil around the bobbin several circles to fix.
2.Presser latch A.
3.Loosen screw D to adjust the latch C to get the proper thread winding 90% of the bobbin capacity.
4.If thread wound unevenly, move guide E to regulate and fasten with screw F.
5.After finish, the winder will stop automatically, pull out the bobbin and cut the thread by cutter G and press the thread under the cutter for next winding.
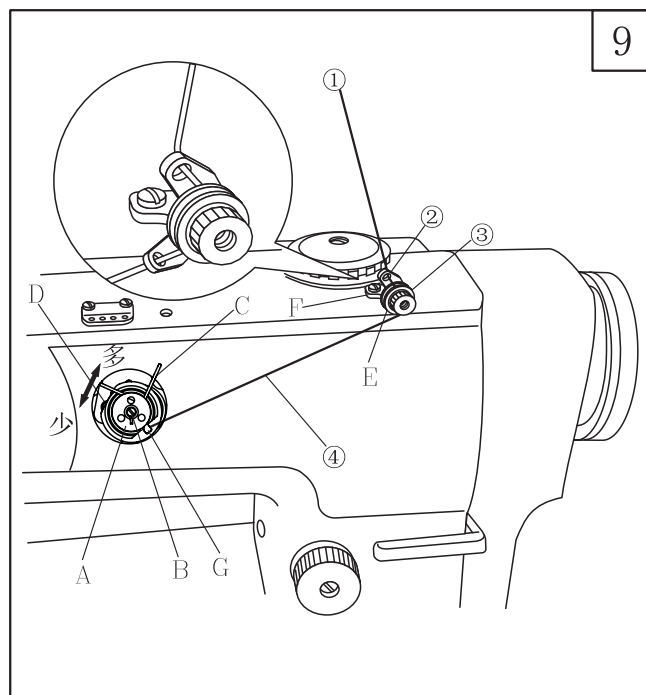
12. Threading the needle (Fig.10)

Thread in sequence as per the illustration.

1-needle
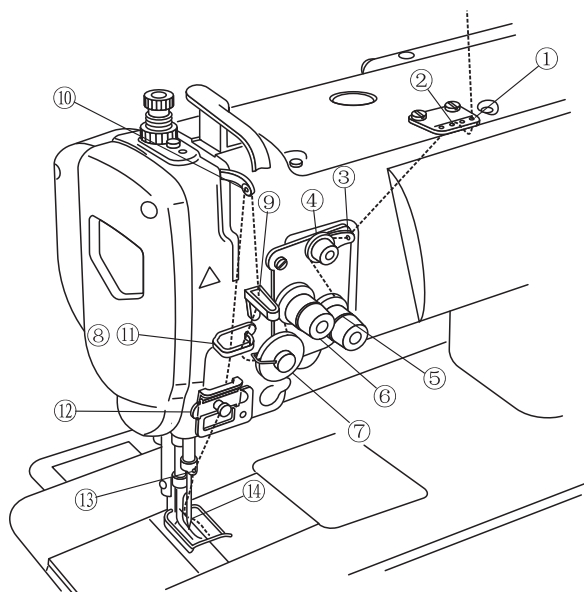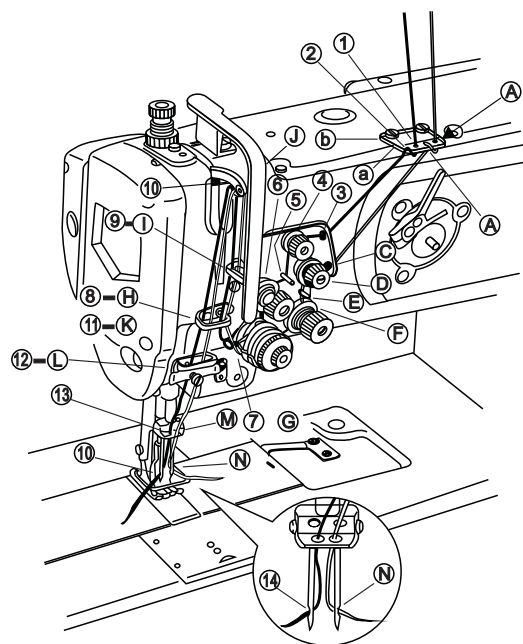
2-needle
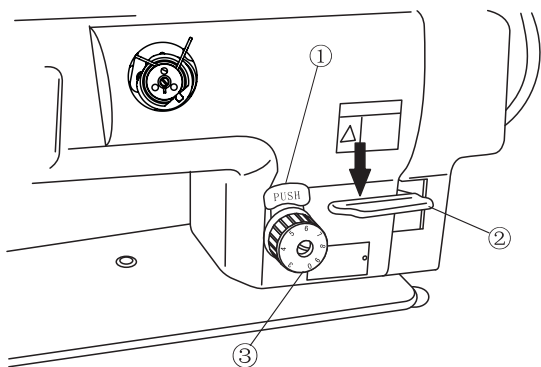
13. Stitch length (Fig.11)

Press the stopper ①, turn the stitch regulating dial ③ leftward or rightward to get your required stitch length.
Press reverse lever ② to start reverse sewing, loose it to restore normal sewing.

14. Thread tension (Fig.12)

Fig 12-1 (1-needle)

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.

12-1
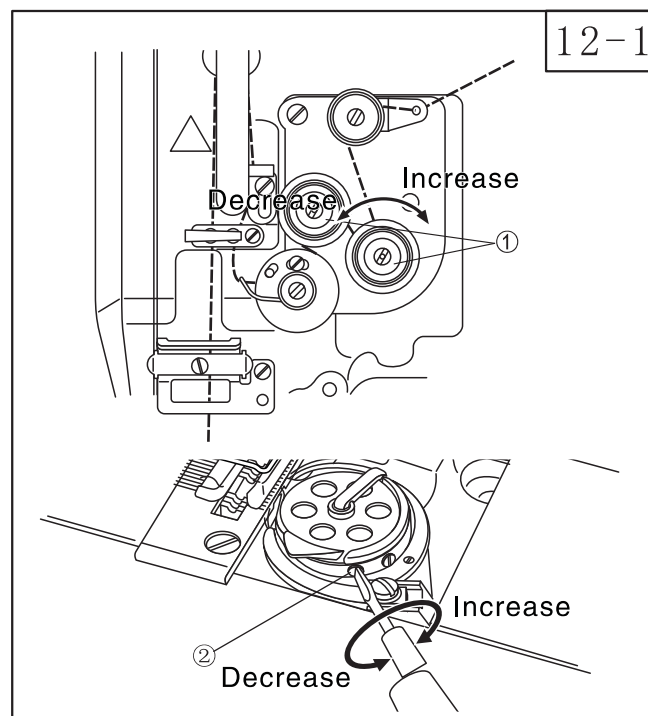
Fig 12-2 (2-needle)

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.

12-2
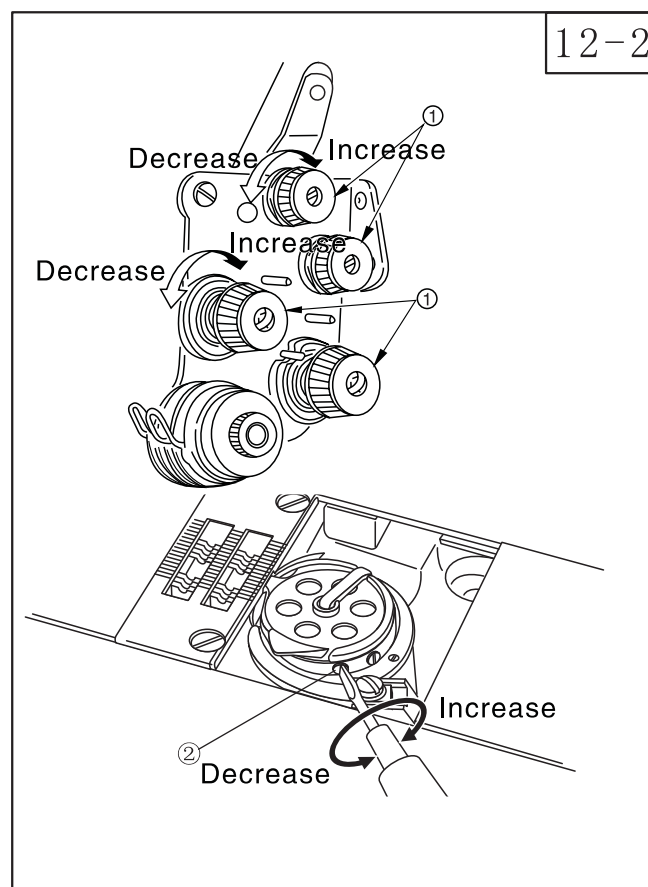
15. Adjusting thread take-up spring (Fig.13)

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 in crease rigidity, clockwise to reduce.
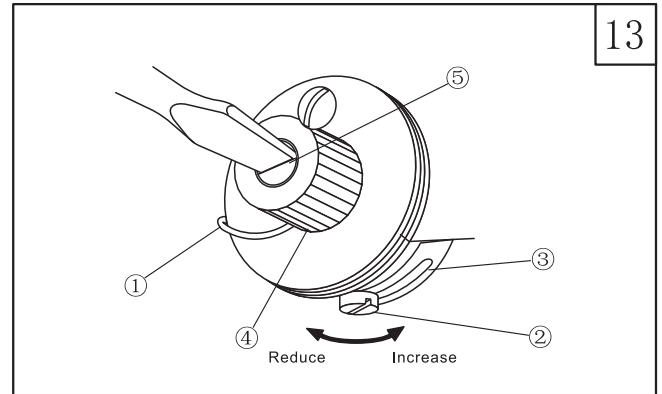
16. Presser foot lift (Fig.14)

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.
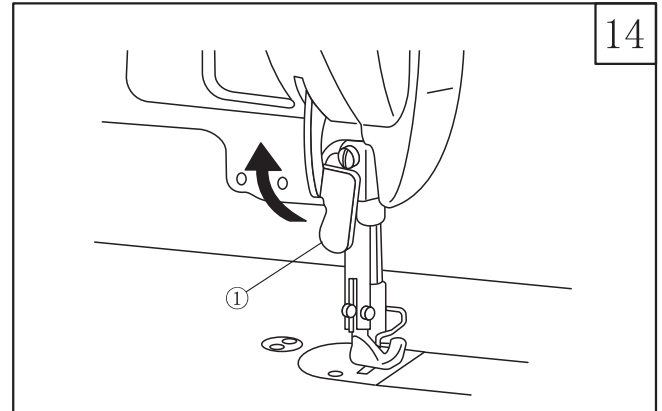
17. Pressure of presser foot (Fig.15)

Turn the regulating bolt ① rightward to increase the pressure, counterclockwise to reduce.
Tighten nut ② after adjustment.
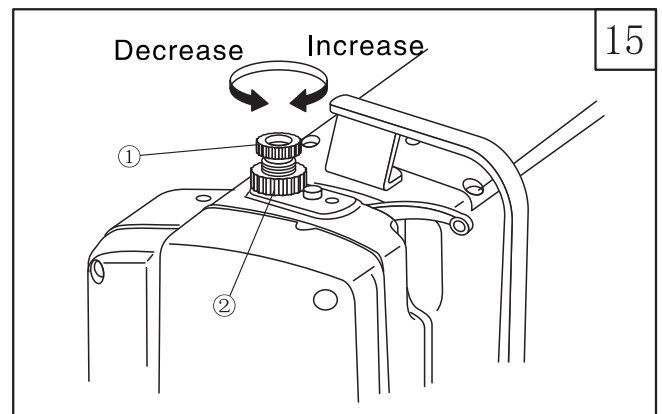
18. Adjusting needle guard plate (Fig.16)

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 incorrect, 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.
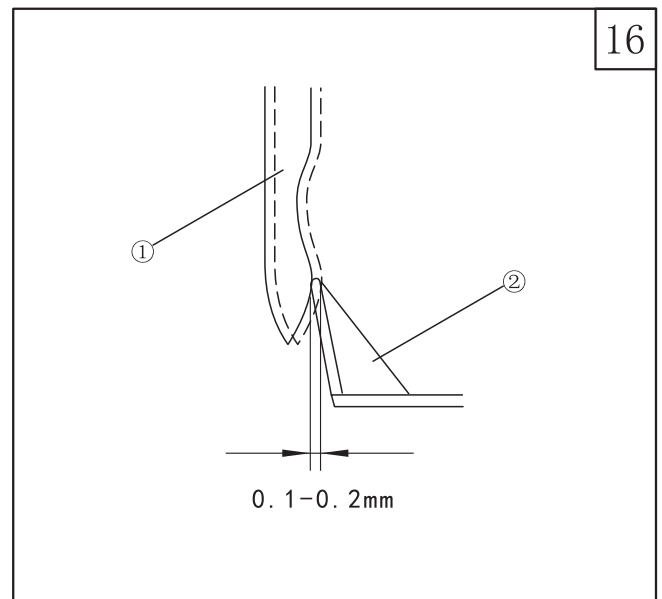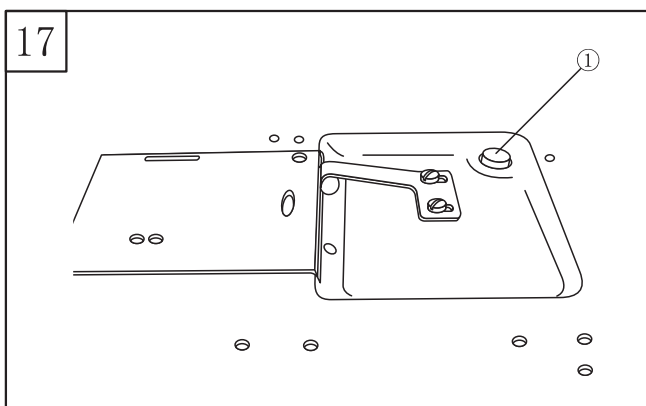
19. Reset of safety clutch (Fig.17)

In case the rotating hook applied with a strong force during operation because of thread jammed 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.Press 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.

0.1-0.3mm
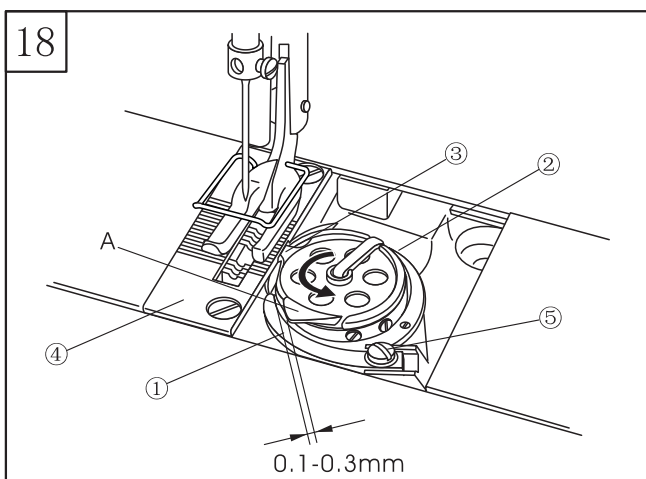
20. Adjusting hook thread opener (Fig.18)

1.Turn the handwheel in normal direction to move the thread opener to it?s 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.

1. 5mm

2. 3mm   0. 05~0. 1mm
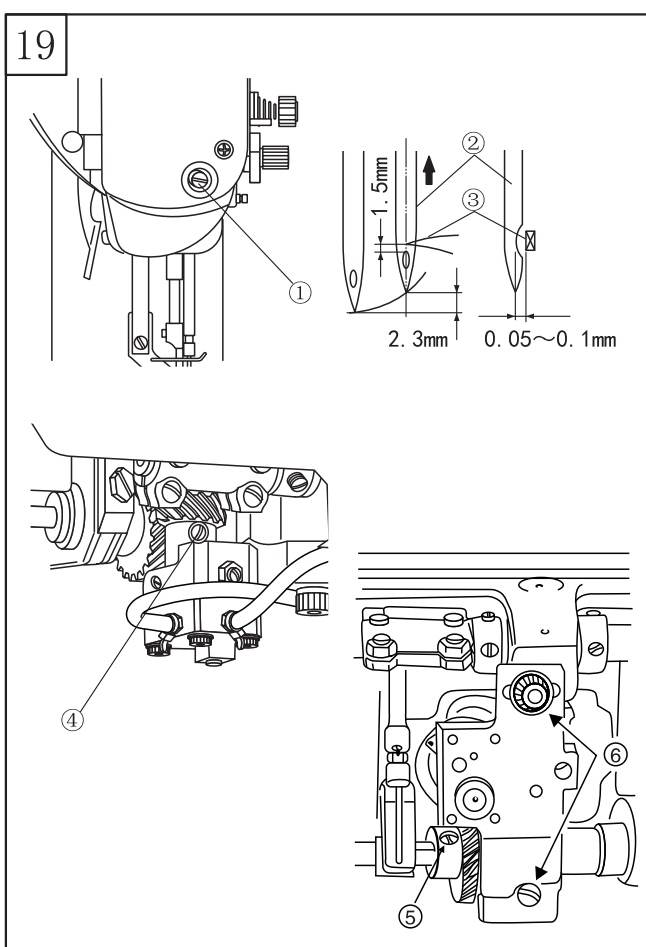
21. Timing between needle and rotating hook (Fig.19)

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 alig ned with needle 2 axis. Tighten setscrews 5, with the 1st screw aligned with the flat notch of the lower shaft.

22. Alternating lift amount of presser feet (Fig.20)

Turn the dial ① to adjust the presser foot lifting amount.
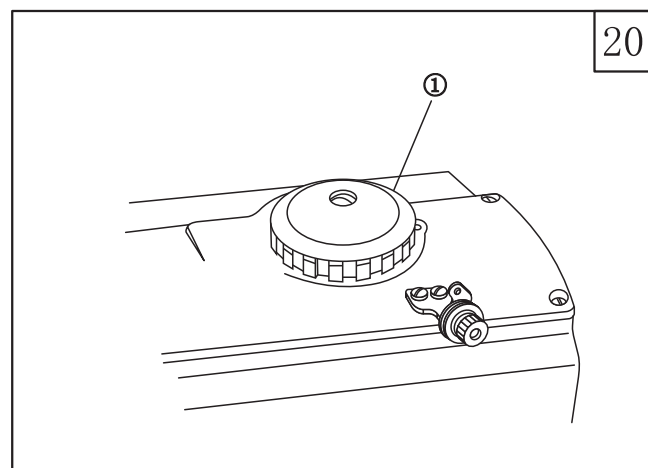
23. Settings for different speeds

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.

Parts Manual

1. Arm and Bed
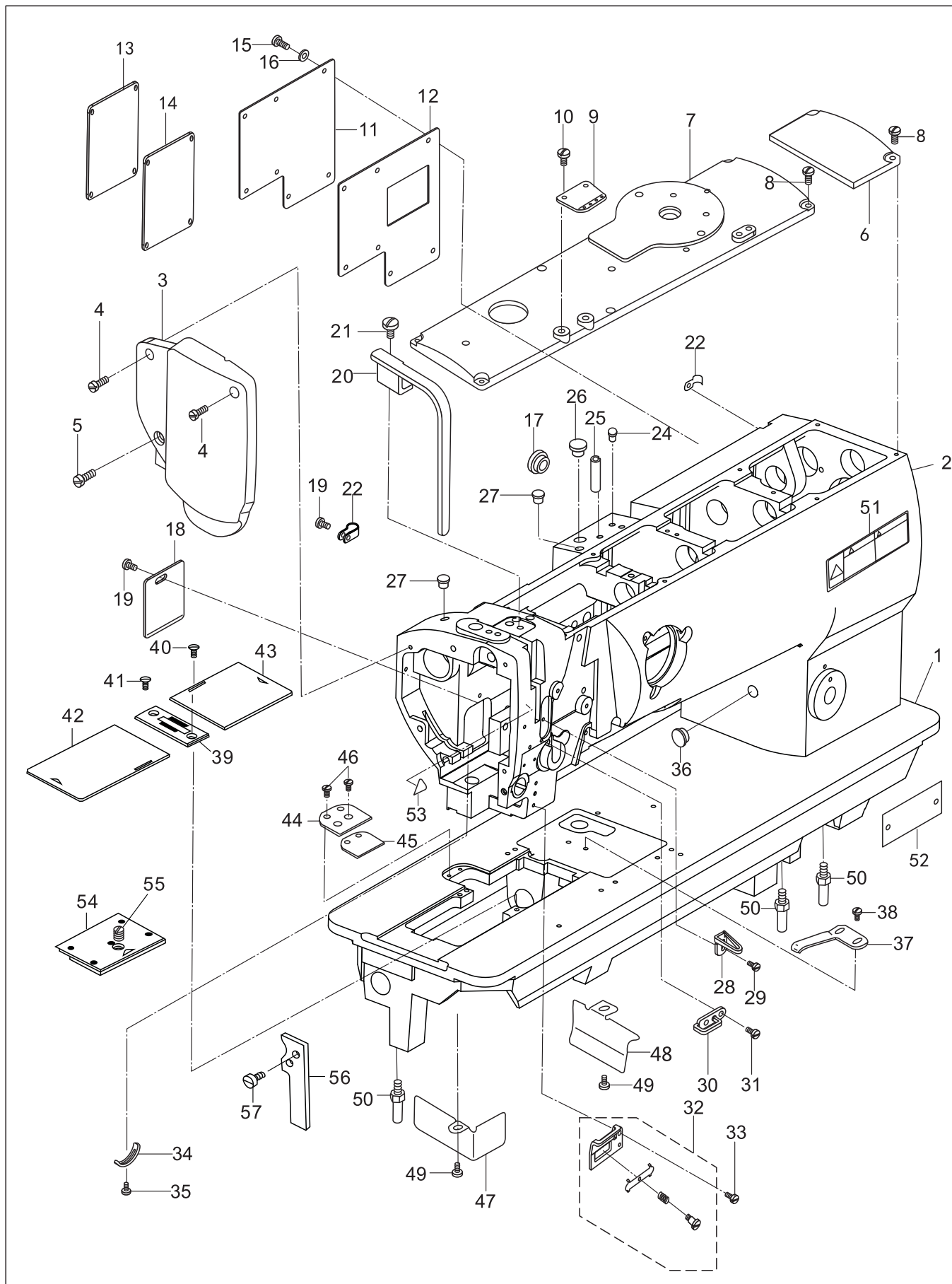
1. Arm and Bed

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	312WF2-001	Bed	1	–	
	313WF2-001	Bed	–	1	
2	541WF2-001	Arm	1	1	
3	92WF2-003	Face plate	1	1	
4	1WF5-039	Screw	2	2	SM11/64"×40
5	26210	Screw	1	1	SM15/64"×28
6	406WF2-002	Top cover	1	1	
7	312WF2-003	Top cover	1	1	
8	1WF1-011	Screw	8	8	SM11/64"×40
9	199WF2-017	Upper thread guide	1	1	
10	21WF1-062	Screw	2	2	SM3/16"×32
11	199WF2-020	Side cover	1	1	
12	199WF2-019	Seal	1	1	
13	228WF2-005	Cover (right)	1	1	
14	228WF2-006	Seal	1	1	
15	1WF5-039	Screw	11	11	SM11/64"×40
16	22T1-007	Washer	11	11	
17	92WF2-030	Rubber plug	3	3	
18	92WF2-011	Small cover	1	1	
19	1WF1-011	Screw	3	3	
20	92WF2-004	Thread take-up lever cover	1	1	
21	13WF2-045	Screw	1	1	SM15/64"×28
22	80WF5-014	Clamp	2	2	
23	1WF6-036	Plate	5	5	
24	199WF2-015	Rubber plug	2	2	
25		Pin	1	1	GB/T879.1 5X20
26	92WF2-028	Rubber plug	1	1	
27	92WF2-029	Rubber plug	2	2	
28	238WF1-003	Thread guide	1	–	
	199WF2-021	Thread guide	–	1	
29	22T1-003C6	Screw	1	1	SM9/64"×40
30	238WF1-004	Thread guide	1	–	
	92WF2-014	Thread guide	–	1	
31	1WF1-007	Screw	1	1	SM9/64"×40
32	199WF2-024	Lower thread guide assy.	1	1	
33	22T1-003C6	Screw	1	1	
34	50WF2-022	Stopper	1	1	
35	1WF1-026	Screw	1	1	SM9/64"×40
36	92WF2-028	Rubber plug	1	1	
37	199WF2-004	Leaf spring	1	1	
38	22T2-019	Screw	2	2	SM9/64"×40
39	199WF2-005	Needle plate	1	–	
	204WF2-003	Needle plate	–	1	

1. Arm and Bed
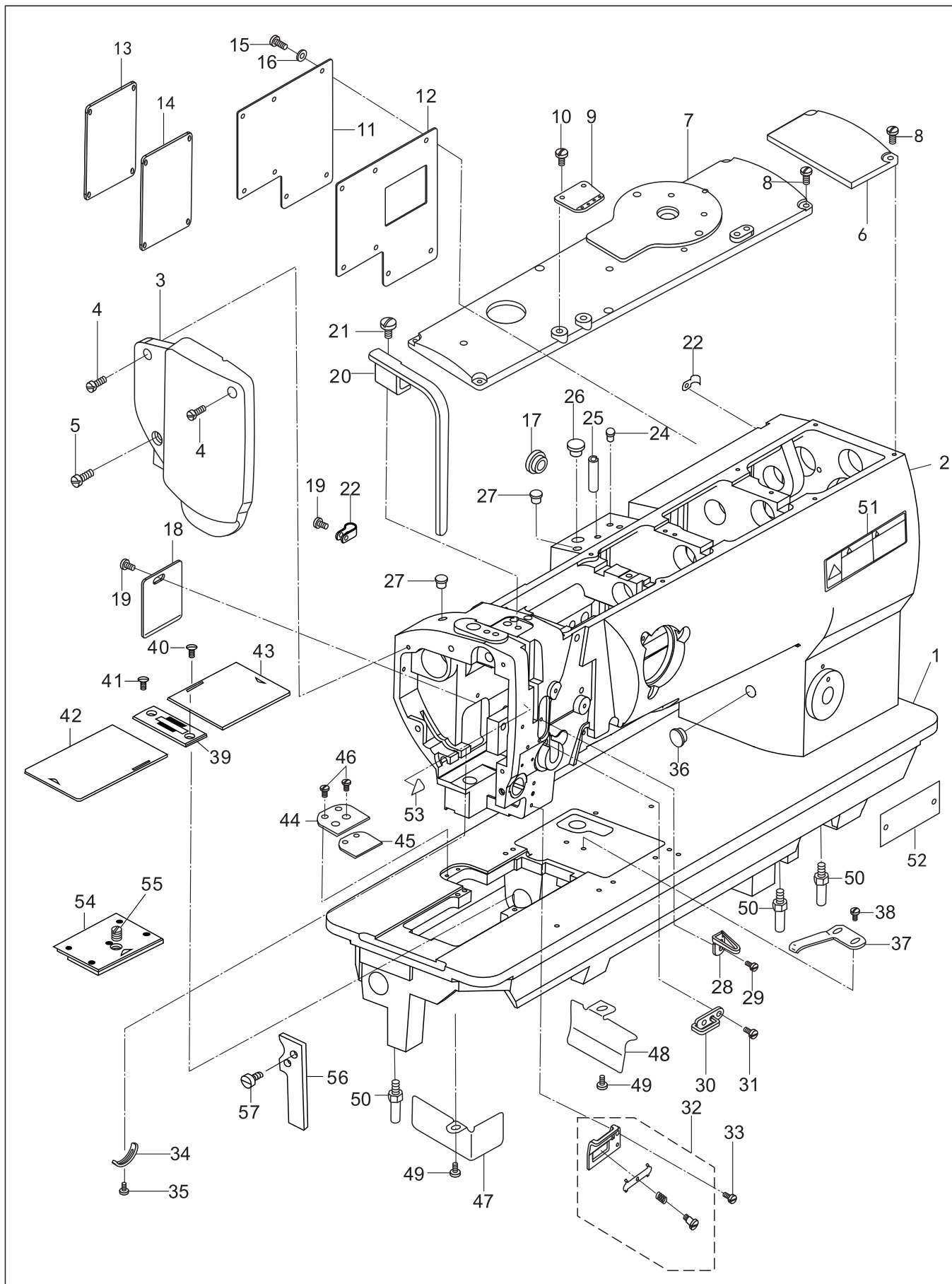
1. Arm and Bed

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
40	199WF2–006	Screw	2	1	
41	204WF2–004	Screw	–	1	
42	199WF2–007	Sliding plate (L)	1	–	
	204WF2–005	Sliding plate (L)	–	1	
43	199WF2–008	Sliding plate (R)	1	–	
	204WF2–006	Sliding plate (R)	–	1	
44	199WF2–012	Auxiliary cover	1	1	
45	199WF2–013	Supporter	1	1	
46	50WF2–031	Screw	4	4	
47	199WF2–003	Cover	1	1	
48	199WF2–009	Oil stopper	1	1	
49	21WF4–047	Screw	2	2	SM11/64"X40
50	199WF2–010	Screw	3	2	
51	7WF4–031	Caution label	1	1	
52	7WF4–033	Model label	1	1	
	7Wf4–034	Model label	1	1	
53	6K4–041	Caution label	1	1	
54	204WF2–007	Front plate	–	1	
55	21WF4–064	Screw	–	1	
56	204WF2–008	Bed support	–	1	
57	7KT4–030	Screw	–	2	

2. Arm shaft & thread take-up mechanisms

2. Arm shaft & thread take-up mechanisms

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	406WF1-001	Arm shaft	1	1	
2	385WF1-002	Front bushing, arm shaft	1	1	
3	406WF1-002	Bushing	1	1	
4	220WF1-004	Oil felt	1	1	
5	1WF5-019	Screw	2	2	SM15/64 " X28
6	92WF2-029	Rubber plug	1	1	
7	199WF1-001A	Thread take-up lever	1	–	
	204WF1-001	Thread take-up lever	–	1	
8	16WF1-010	Pin shaft	1	1	
9	199WF1-003	Oil wick	1	1	Φ2.5×450
10	17WF4-016	Screw	2	2	SM15/64"×28
11	50WF1-006	Slide block	1	–	
	204WF1-008	Slide block	–	1	
12	199WF1-004	Oil wick	1	1	
13	92WF1-006	Needle bar link	1	1	
14	50WF1-008	Pin	1	1	
15	199WF1-005	Wick	1	1	Φ7×30
16	92WF1-007	Needle bar crank	1	1	
17	42WF3-007	Screw	2	2	SM15/64"×28
18	50WF1-013	Screw	1	1	SM9/32"×28
19	20T2-007	Screw	1	1	SM9/32"×28
20	92WF3-014	Feed cam	1	1	
21	199WF3-010	Screw	2	2	SM1/4"×40
22	92WF3-029A	Feed eccentric cam	1	1	
23	199WF3-010	Screw	2	2	SM1/4"×40
24	92WF3-030	Cam cover	1	1	
25	7WF5-017	Screw	2	2	SM11/64"×40
26	385WF1-004	Collar	1	1	
27	42WF1-010	Screw	2	2	M5×6
28	199WF1-002	Pulley	1	1	
29	92WF1-014	Screw	2	2	
30	92WF1-034	Teeth belt	1	1	
31	110WF1-017	Lower synchronized pulley	1	1	
32	22WF1-013	Leaf spring	2	2	
33	22WF1-018	Stopper	1	1	
34	22WF1-016	Stop plate	1	1	
35	22WF1-014	Twist spring	1	1	
36	22WF1-017	Link	1	1	
37	199WF1-053	Bushing	1	1	
38	B225001	Pin	1	1	GB/T91 1.2X8
39	199WF1-054	Screw	2	2	SM1/4"X40
40	22WF1-019	Screw	2	2	

2. Arm shaft & thread take-up mechanisms
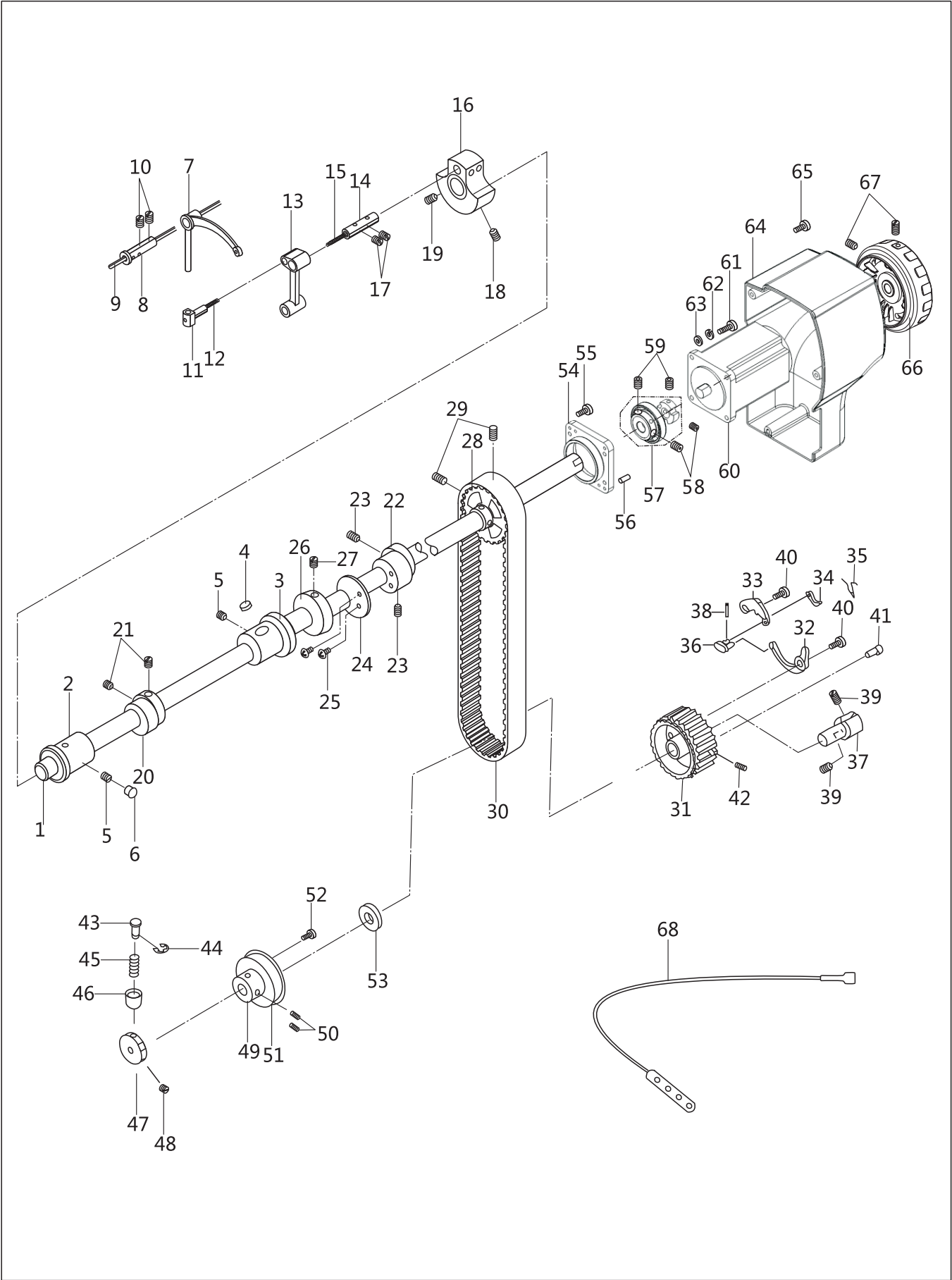
2. Arm shaft & thread take-up mechanisms

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
41	22WF1-015	Pin	1	1	
42	22WF1-020	Screw	2	2	
43	199WF1-020	Push button	1	–	
	204WF1-006	Push button	–	1	
44		Retaining ring	1	1	GB 896 5
45	199WF1-021	Spring	1	1	
46	199WF1-022	Bushing	1	1	
47	199WF1-023	Wheel	1	–	
	204WF1-007	Wheel	–	1	
48	18227	Screw	2	–	SM1/4"×40
	17WF4-016	Screw	–	2	SM15/64"×28
49	199WF1-024	Collar	1	1	
50	21WF1-022	Screw	2	2	SM1/4"×40
51		Bearing	2	2	50104 20×42×12
52	199WF1-025	Screw	2	2	SM3/16"×28
53	199WF1-026	Washer	1	1	
54	385WF1-009	Motor base	4	4	
55	93WF7-014	Screw	2	2	M5×14
56		Pin	1	1	GB/T 117 5×22
57	385WF1-005	Coupling	2	2	
58	394WF2-006	Screw	2	2	M6×0.75×8
59	93WF15-012	Screw	1	1	M6×0.75×8
60	541WF1-001	Motor	4	4	
61	80WF6-025	Screw	4	4	M5×20
62		Washer	4	4	GB 859 5
63		Washer	1	1	GB/T97.1 5
64	385WF1-006	Motor cover	3	3	
65	80WF6-025	Screw	1	1	M5×20
66	258WF2-006	Handwheel	2	2	
67	258WF2-007	Screw	1	1	GB/T80 M5×8
68	541WF1-003	Sewing light	1	1	

3. Needle bar & swing mechanisms
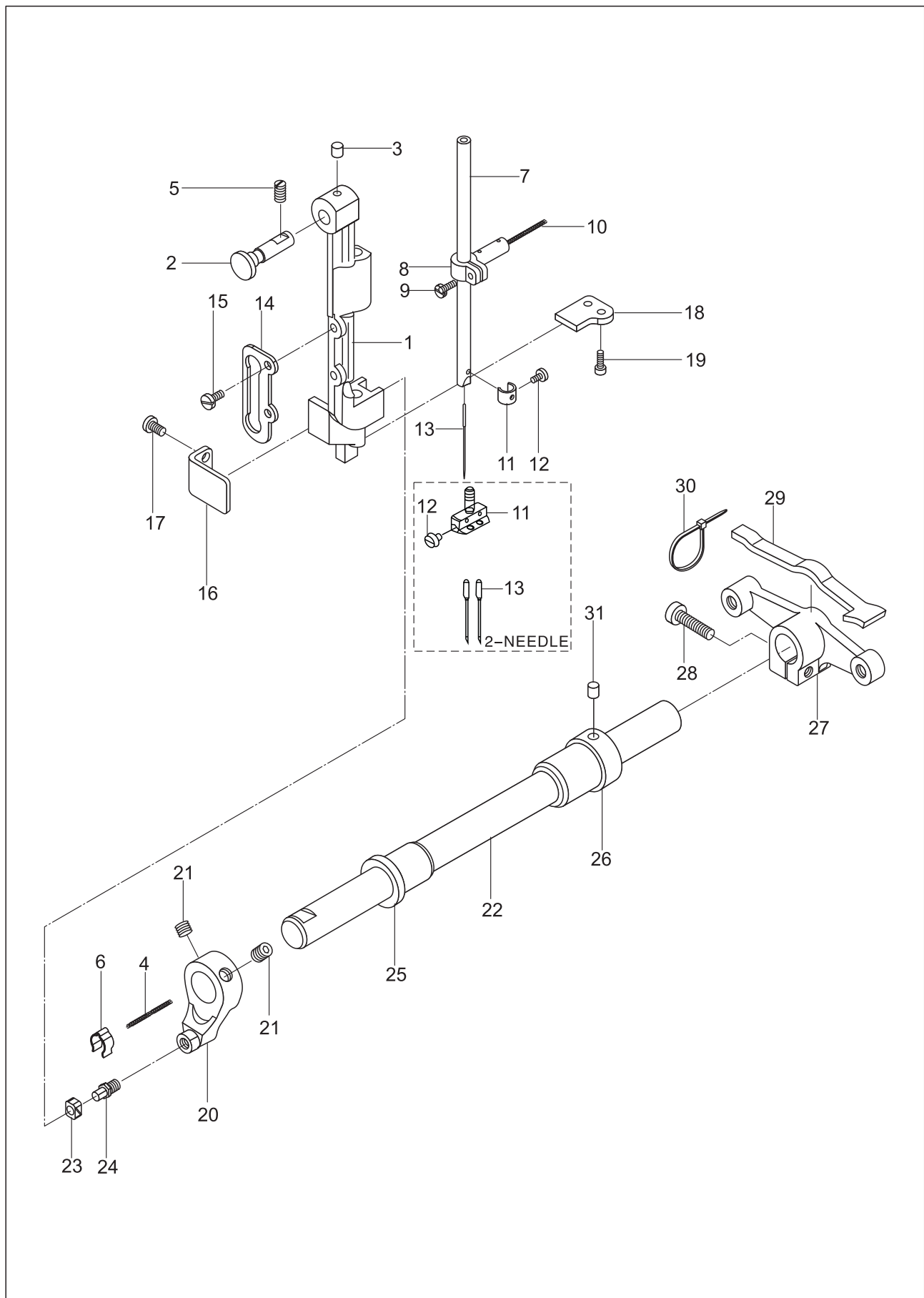
3. Needle bar & swing mechanisms

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	92WF3-008	Needle bar rocking bracket	1	–	
	204WF3-001	Needle bar rocking bracket	–	1	
2	92WF3-009	Pin	1	1	
3	92WF3-007	Oil felt	1	1	
4	199WF3-001	Oil wick	1	1	Φ2×160
5	42WF3-007	Screw	1	1	SM15/64"×28
6	92WF3-003	Leaf spring	1	1	
7	50WF1-001	Needle bar	1	–	
	204WF3-002	Needle bar	–	1	
8	50WF3-003	Needle bar joint	1	–	
	204WF3-003	Needle bar joint	–	1	
9	36WF3-029B	Screw	1	1	
10	199WF3-002	Oil wick	1	1	Φ6×20
11	35T1-103	Needle bar thread guide	1	–	
	204WF3-004	Needle clamp	–	1	
12	199WF1-055	Screw	1	–	SM1/8"×44
	204WF3-005	Screw	–	2	
13		Needle	1	2	DP×17 23#
14	50WF3-030	Guide rail	1	1	
15	1WF1-011	Screw	2	2	SM11/64"×40
16	92WF3-011	Position plate	1	1	
17	W01111	Screw	2	2	SM11/64"×40
18	92WF3-010	Position plate	1	1	
19	21WF1-054	Screw	2	2	SM91/64"×40
20	92WF3-002A	Crank	1	1	
21	92WF3-070	Screw	2	2	
22	312WF3-001	Rocking shaft	1	1	
23	92WF3-004	Slide block	1	1	
24	92WF3-002B	Pin	1	1	
25	92WF3-005	Front bushing	1	1	
26	92WF3-006	Rear bushing	1	1	
27	92WF3-012	Crank	1	1	
28	52WF1-050	Screw	1	1	
29	92WF3-013	Oil felt	1	1	
30	2KT7-001A	Band	1	1	
31	92WF3-007	Oil felt	1	1	

4. Upper feed mechanisms
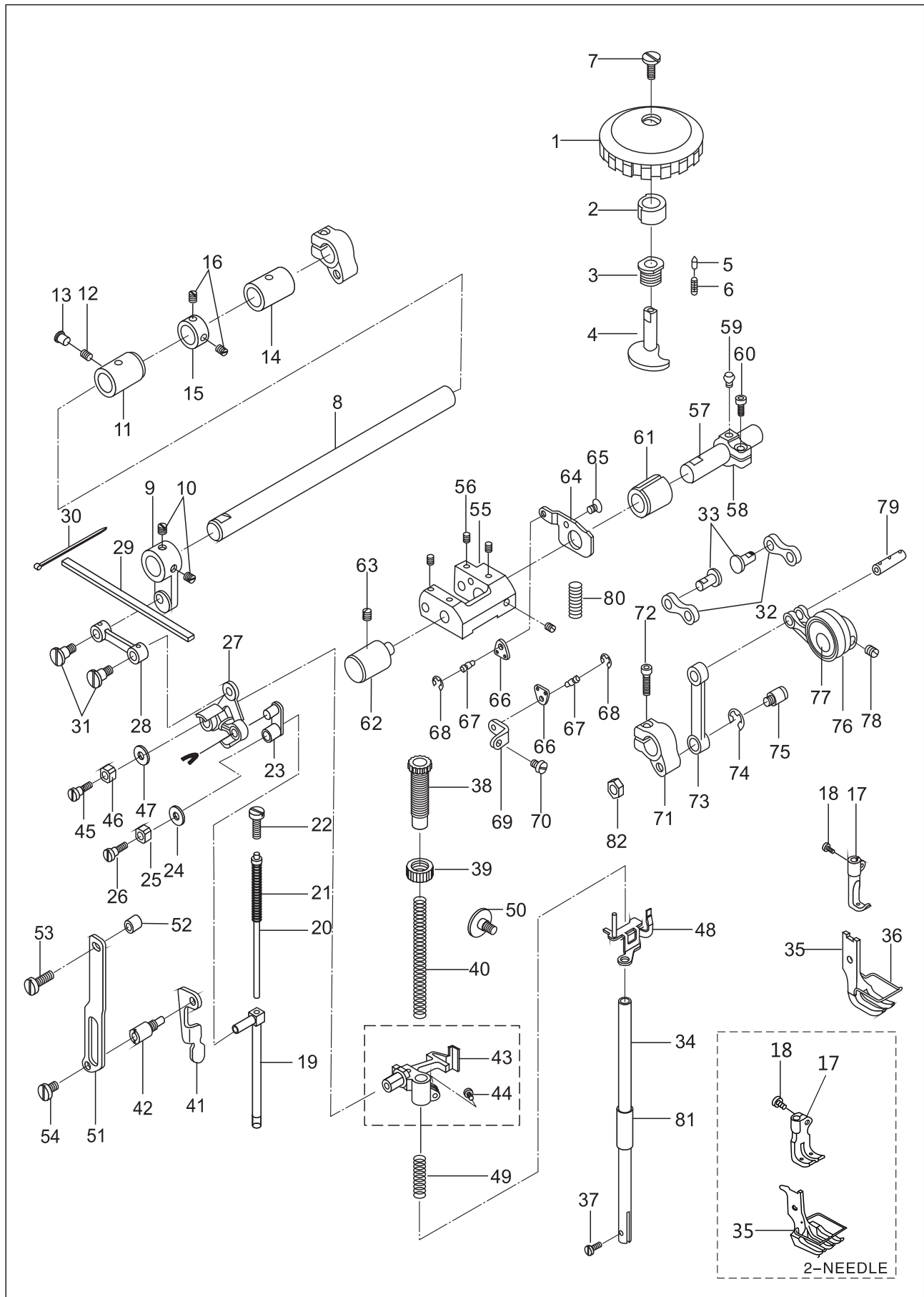
No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	119WF7-017A	Dial	1	1	
2	119WF7-017B	Bushing	1	1	
3	119WF7-019	Bushing	1	1	
4	119WF7-018	Shaft	1	1	
5	994131	Pin	1	1	
6	93WF8-002	Spring	1	1	
7	302395	Screw	1	1	
8	92WF3-018	Shaft	1	1	
9	92WF3-019	Crank	1	1	
10	2KT5-027	Screw	2	2	SM1/4"×40
11	199WF4-001	Front bushing	1	1	
12	1WF5-019	Screw	1	1	SM15/64"×28
13	92WF2-029	Rubber plug	1	1	
14	92WF3-021	Rear bushing	1	1	
15	92WF3-022	Collar	1	1	
16	22T3-002B2	Screw	2	2	SM1/4"×40
17	92WF3-023	Walking foot	1	–	
	204WF4-001	Walking foot	–	1	
18	50WF3-020	Screw	1	1	
19	50WF3-018	Walking foot lifting bar	1	1	
20	92WF3-024	Spring guide bar assy.	1	1	
21	50WF3-032	Spring	1	1	
22	6K1-048	Regulating screw	1	1	SM15/64"×28
23	50WF3-027	Link	1	1	
24	50WF3-028	Felt	1	1	
25	50WF3-029	Slide block	1	1	
26	20T4-006	Screw	1	1	SM11/64"×40
27	92WF3-025	Lifting plate	1	1	
28	92WF3-026	Link	1	1	
29	92WF3-027	Oil felt	1	1	
30	2KT7-001A	Band	2	2	
31	92WF3-028	Screw	2	2	
32	119WF7-011	Link	2	2	
33	994118	Pin shaft	2	2	
34	22WF3-005	Presser bar	1	1	
35	92WF4-001	Presser foot	1	–	
	204WF4-002	Presser foot	–	1	
36	92WF4-002	Finger guard	1	–	
37	22WF3-014	Screw	1	1	SM9/64"×40
38	92WF4-003	Regulating bolt	1	1	SM1/2"×28
39	1KT4-002	Nut	1	1	SM1/2"×28
40	92WF4-023	Spring	1	1	
41	385WF3-001	Foot lift lever	1	1	
42	92WF4-005	Lift lever shaft	1	1	

4. Upper feed mechanisms
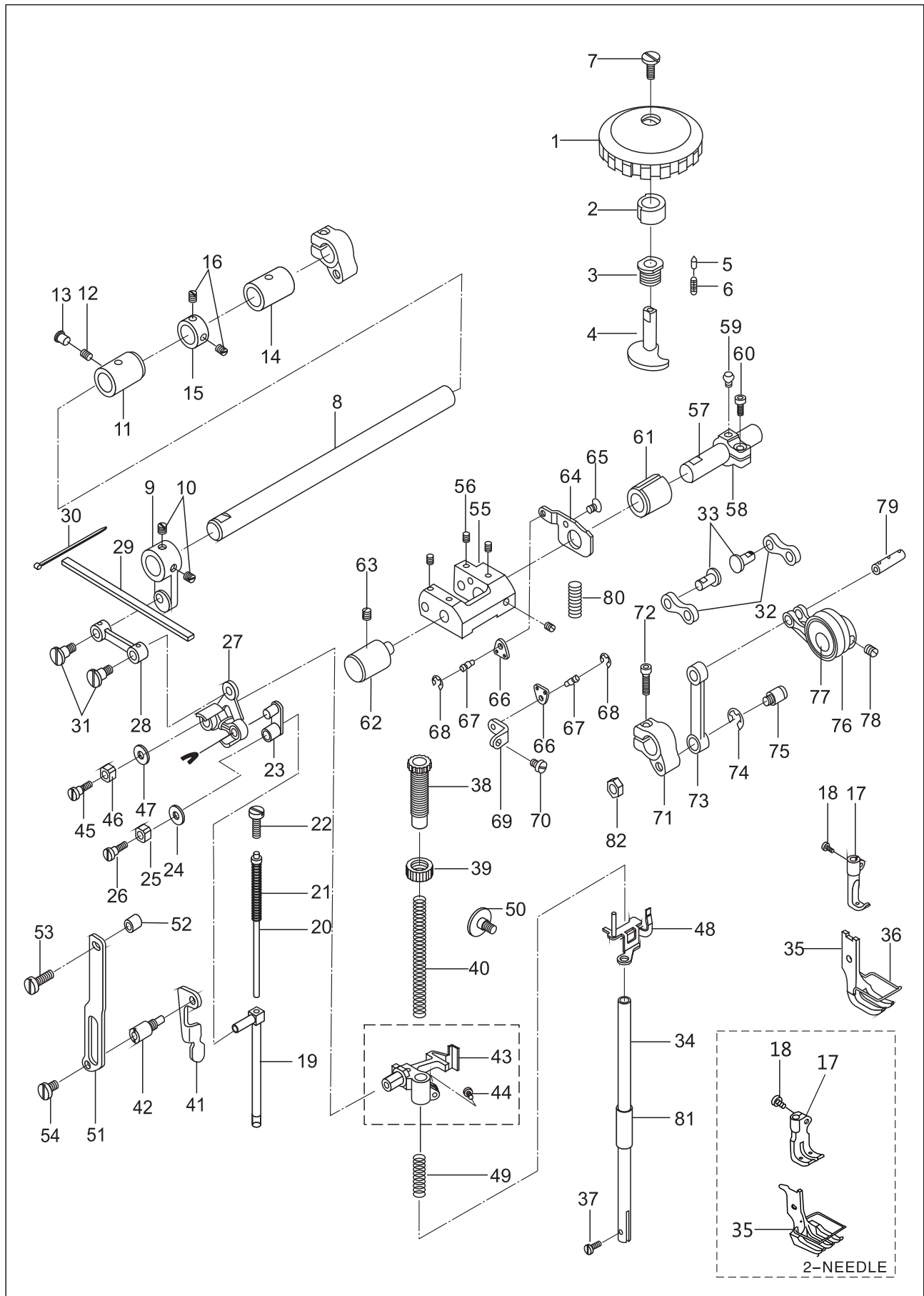
4. Upper feed mechanisms

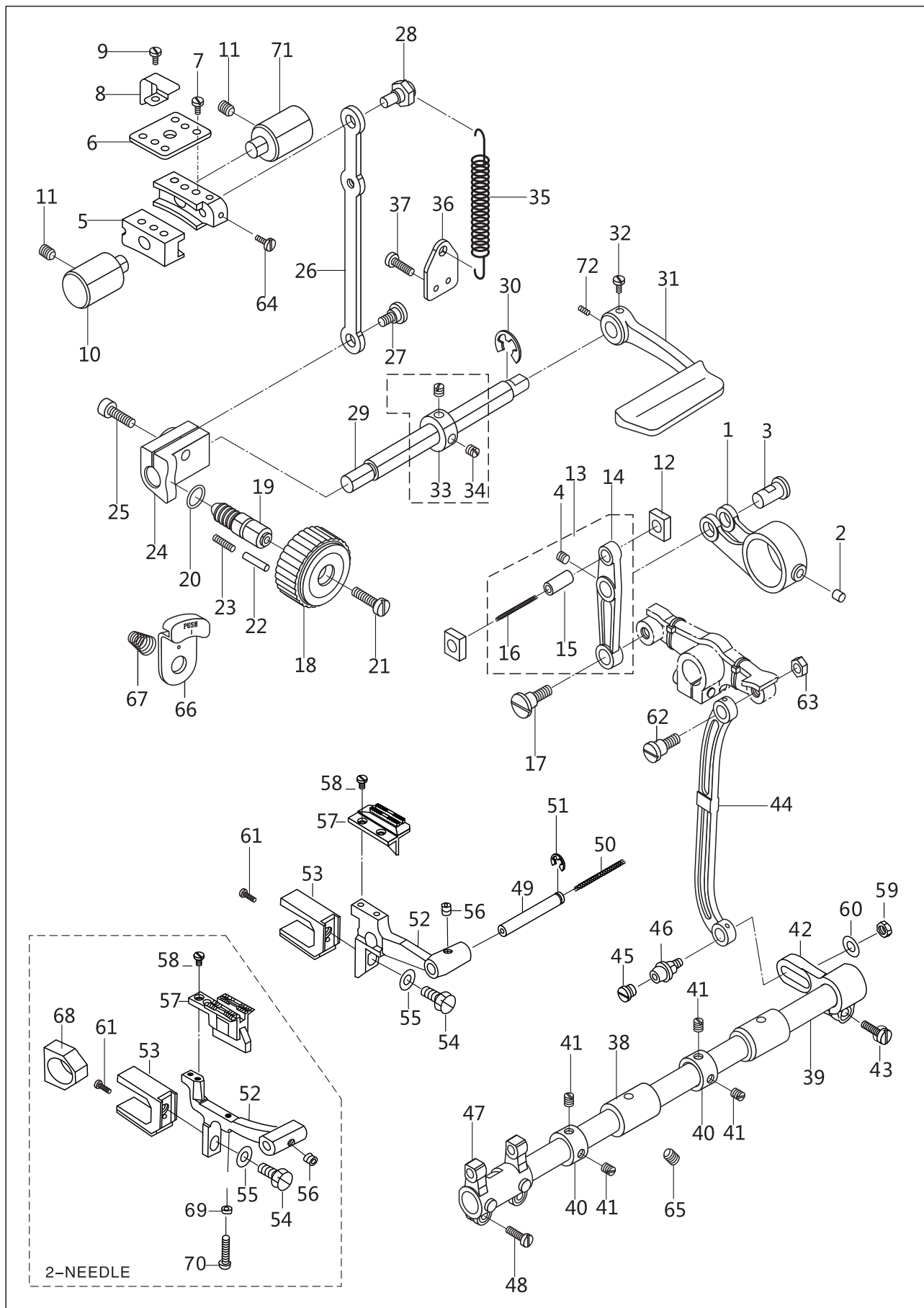| No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
43	92WF4-006	Bracket	1	1	
44	1WF1-011	Screw	1	1	SM11/64"×40
45	92WF4-007	Screw	1	1	
46	50WF3-029	Slide block	1	1	
47	92WF4-008	Washer	1	1	
48	92WF4-009	Releasing plate	1	1	
49	50WF4-013	Spring	1	1	
50	50WF4-014	Screw	1	1	
51	92WF4-010	Guide plate	1	1	
52	92WF4-011	Washer	1	1	
53	60WF4-003	Screw	1	1	SM15/64"×28
54	52WF3-027	Screw	1	1	SM15/64"×28
55	119WF7-001	Adjusting bracket	1	1	
56	6K2-043	Screw	4	4	SM15/64"×28
57	119WF7-003	Shaft	1	1	
58	119WF7-004	Crank	1	1	
59	119WF7-005	Screw	1	1	
60	72WF5-021	Screw	1	1	
61	119WF7-002	Bushing	1	1	
62	92WF3-037	Shaft	1	1	
63	1WF5-019	Screw	1	1	
64	119WF7-012	Retaining plate	1	1	
65		Screw	1	1	GB/T819.2 M5×8
66	119WF7-014	Connecting plate	2	2	
67	119WF7-015	Screw	2	2	
68		Retaining ring	2	2	GB896 5
69	119WF7-016	Hanger	1	1	
70	50WF3-089	Screw	1	1	
71	119WF7-009	Crank	1	1	
72	80WF6-025	Screw	1	1	
73	119WF7-008B	Link	1	1	
74		Retaining ring	1	1	GB896 8
75	119WF7-010	Screw	1	1	
76	119WF7-008A	Link	1	1	
77	119WF7-007	Needle bearing	1	1	
78	21WF1-022	Screw	1	1	
79	119WF7-008C	Pin shaft	1	1	
80	119WF7-013	Spring	1	1	
81	50WF4-001	Bushing	1	1	
82	7WF5-001	Nut	1	1	

5. Lower feed, reverse and feed regulating
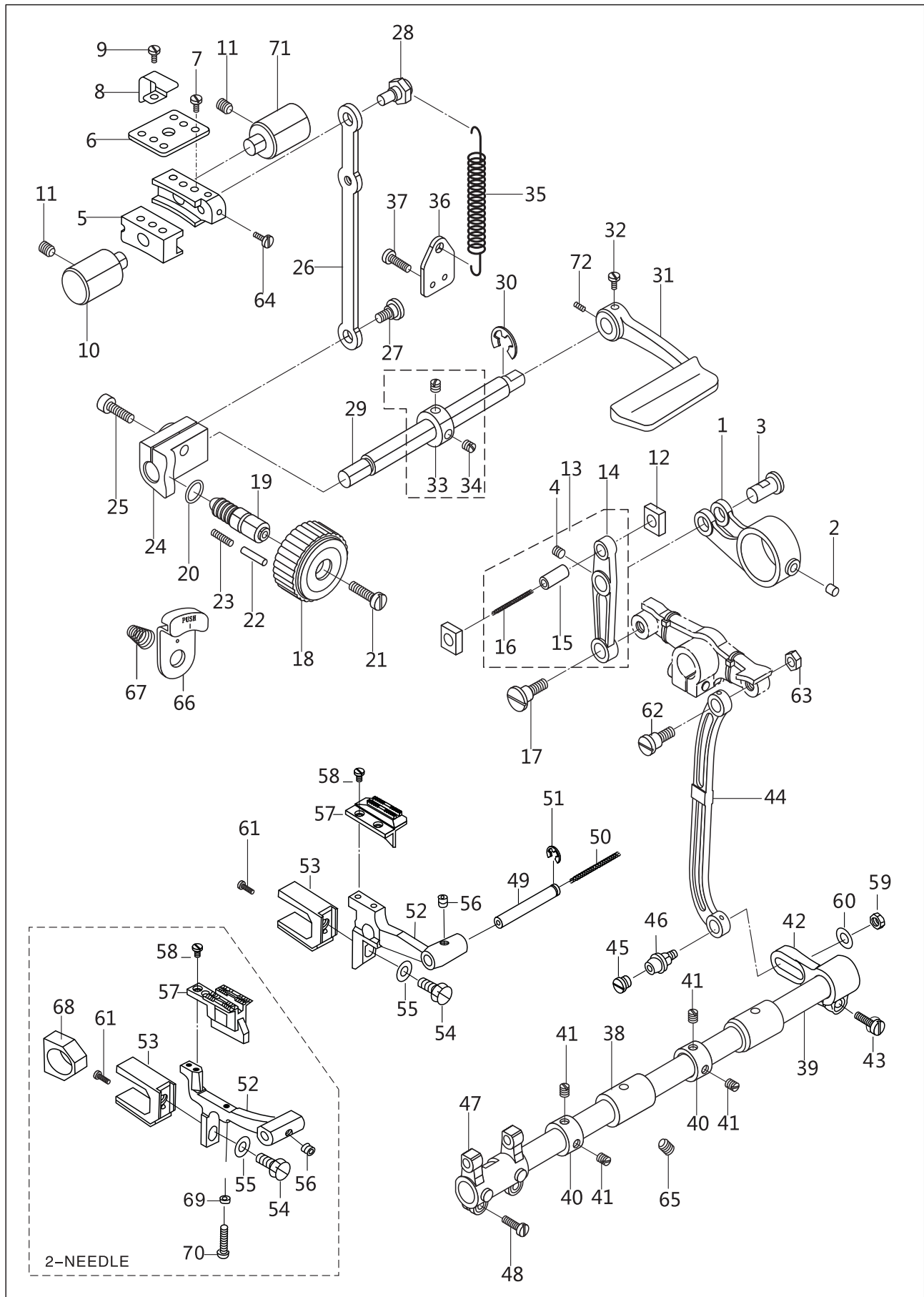
2-NEEDLE

5. Lower feed, reverse and feed regulating

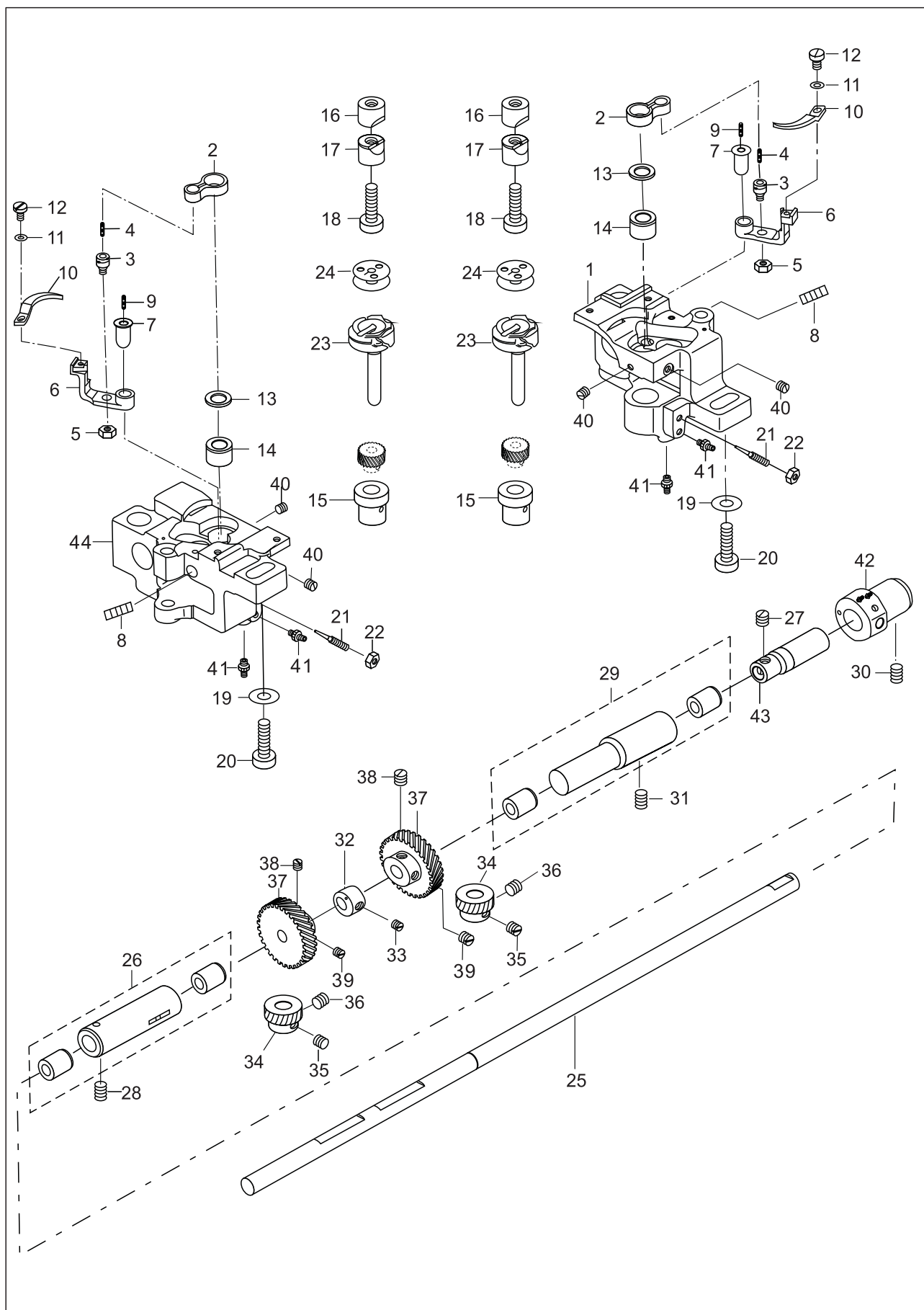| No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	92WF3-031	Feed link	1	1	
2	92WF3-032	Oil felt	1	1	
3	92WF3-033	Pin	1	1	M5
4	6K2-043	Screw	1	1	
5	238WF3-006	Reverse feed bracket	1	1	
6	238WF3-005	Retaining plate	2	2	
7	1WF1-011	Screw	4	4	
8	238WF3-007	Presser plate	1	1	
9	33T3-006	Screw	2	2	
10	92WF3-037	Shaft	1	1	
11	1WF5-019	Screw	2	2	SM15/64"×28
12	238WF3-004	Slide block	2	2	
13	92WF3-039	Feed rocking bar assy	1	1	
14	92WF3-039A	Feed rocking bar	1	1	
15	92WF3-039B	Pin	1	1	
16	199WF3-003	Oil wick	1	1	Φ1.5×35
17	92WF3-040	Screw	1	1	
18	92WF3-041	Stitch regulating dial	1	1	
19	92WF3-042	Screw bar	1	1	
20	92WF3-043	Seal ring	1	1	
21	92WF3-044	Screw	1	1	SM3/16"×28
22	92WF3-072	Pin	1	1	
23	50WF3-058	Spring	1	1	
24	92WF3-045	Holder	1	1	
25	6K2-024	Screw	1	1	M6
26	92WF3-046	Link	1	1	
27	92WF3-047	Screw	1	1	
28	92WF3-048	Eccentric pin	1	1	
29	385WF6-001	Reverse feed lever shaft	1	1	
30	92WF3-071	Retaining ring	1	1	GB896 9
31	92WF3-050	Reverse feed lever	1	1	
32	92WF3-051	Screw	1	1	SM3/16"×28
33	92WF3-052	Collar	1	1	
34	22T3-002B2	Screw	2	2	SM1/4"×40
35	92WF3-053	Spring	1	1	
36	92WF3-054	Hanging hook	1	1	
37	1WF3-009	Screw	2	2	SM11/64"×40
38	92WF3-021	Feed shaft bushing	2	2	
39	312WF3-002	Feed shaft	1	1	
40	92WF3-022	Feed shaft collar	2	2	
41	22T3-002B2	Screw	4	4	SM1/4"×40
42	119WF3-001	Driving crank	1	1	
43	41WF3-018	Screw	1	1	SM3/16"×28

5. Lower feed, reverse and feed regulating

2-NEEDLE

5. Lower feed, reverse and feed regulating

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
44	92WF3-058	Link	1	1	
45	119WF3-003	Screw	1	1	
46	119WF3-002	Screw	1	1	
47	92WF3-060	Feed crank	1	1	
48	1WF3-009	Screw	2	2	SM11/64"×40
49	92WF3-061	Pin	1	1	
50	199WF3-004	Oil wick	1	1	Φ2.5×120
51		Retaining ring	1	1	GB896 5
52	199WF3-005	Feed dog support	1	–	
	204WF3-006	Feed dog support	–	1	
53	199WF3-006	Lifting fork	1	–	
	204WF3-007	Lifting fork	–	1	
54	42WF1-008	Screw	1	1	SM15/64"×28
55	42WF1-009	Washer	1	1	
56	80WF6-036	Screw	1	1	
57	199WF3-007	Feed dog	1	–	
	204WF3-010	Feed dog	–	1	
58	199WF3-008	Screw	2	2	
59	22WF3-004	Nut	1	1	
60	71WF3-058	Washer	1	1	
61	13WF6-008	Screw	1	1	
62	92WF3-059	Screw	1	1	
63	6KT2-053	Nut	1	1	
64	36WF3-029B	Screw	2	2	
65	17WF4-016	Screw	2	2	
66	92WF3-071	Stopper	1	1	
67	36T5-011	Spring	1	1	
68	204WF3-008	Slide block	–	1	
69	41WF3-012	Nut	–	1	
70	204WF3-009	Screw	–	1	
71	92WF3-074	Shaft (long)	1	1	
72	21WF3-010	Screw	1	1	SM15/64"×28

6. Lower shaft and rotating hook

6. Lower shaft and rotating hook

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	199WF1-027	Hook saddle, R	1	1	
2	199WF1-028A	Thread opener link	1	2	
3	199WF1-029	Pin	1	2	
4	199WF1-030	Oil wick	1	2	Φ3×15
5	27WF4-008	Nut	1	2	
6	199WF1-031	Thread opener supporter	1	2	
7	199WF1-032	Shaft	1	2	
8	52WF2-030	Screw	1	2	SM11/64"×40
9	199WF1-033	Oil wick	1	2	Φ3×20
10	199WF1-034	Thread opener	1	2	
11	36WF1-042	Washer	1	2	
12	21WF1-054	Screw	1	2	SM9/64"×40
13	199WF1-035	Adjusting washer	1	2	1.1~1.6
14	199WF1-036	Upper bushing, rotating hook	1	2	
15	199WF1-037	Lower bushing, rotating hook	1	2	
16	199WF1-038	Block A	1	2	
17	199WF1-039	Block B	1	2	
18	1WF2-060	Bolt	1	2	
19	199WF1-040	Washer	1	2	
20		Bolt	1	2	GB/T 70.1 M8×40
21	92WF1-031	Screw	1	2	
22	27WF4-008	Nut	1	2	
23	199WF1-041	Hook assy.	1	2	
24	1WF2-065	Bobbin	1	2	
25	312WF1-002	Lower shaft	1	–	
26	313WF1-002	Lower shaft	–	1	
	312WF1-003	Front bushing, lower shaft	1	–	
	313WF1-001	Front bushing, lower shaft	–	1	
27	2KT5-027	Screw	3	3	SM1/4"×40
28	17WF4-016	Screw	1	1	SM15/64"×28
29	312WF1-004	Middle bushing assy.	1	1	
30	17WF4-016	Screw	1	1	SM15/64"×28
31	17WF4-016	Screw	1	1	SM15/64"×28
32	199WF1-045	Feed dog lifting cam	1	1	
	204WF1-005	Feed dog lifting cam	1	–	
33	50WF3-017	Screw	1	–	SM15/64"×28
	42WF1-014	Screw	–	1	SM1/4"×40
34	199WF1-046	Rotating hook gear	1	2	SM15/64"×28
35	199WF1-052	Screw	1	2	SM1/4"×40
36	42WF1-014	Screw	1	2	SM1/4"×40
37	199WF1-047	Lower shaft gear	1	2	
38	2KT5-027	Screw	1	2	SM1/4"×40
39	52WF5-020	Screw	1	2	
40	36WF5-021	Screw	3	6	SM11/64"×40
41	199WF1-048	Oil tube connector	2	4	
42	199WF1-056	Piston assy.	1	1	
43	199WF1-057	Shaft	1	1	
44	204WF1-002	Hook saddle, left	–	1	

7. Thread tension components
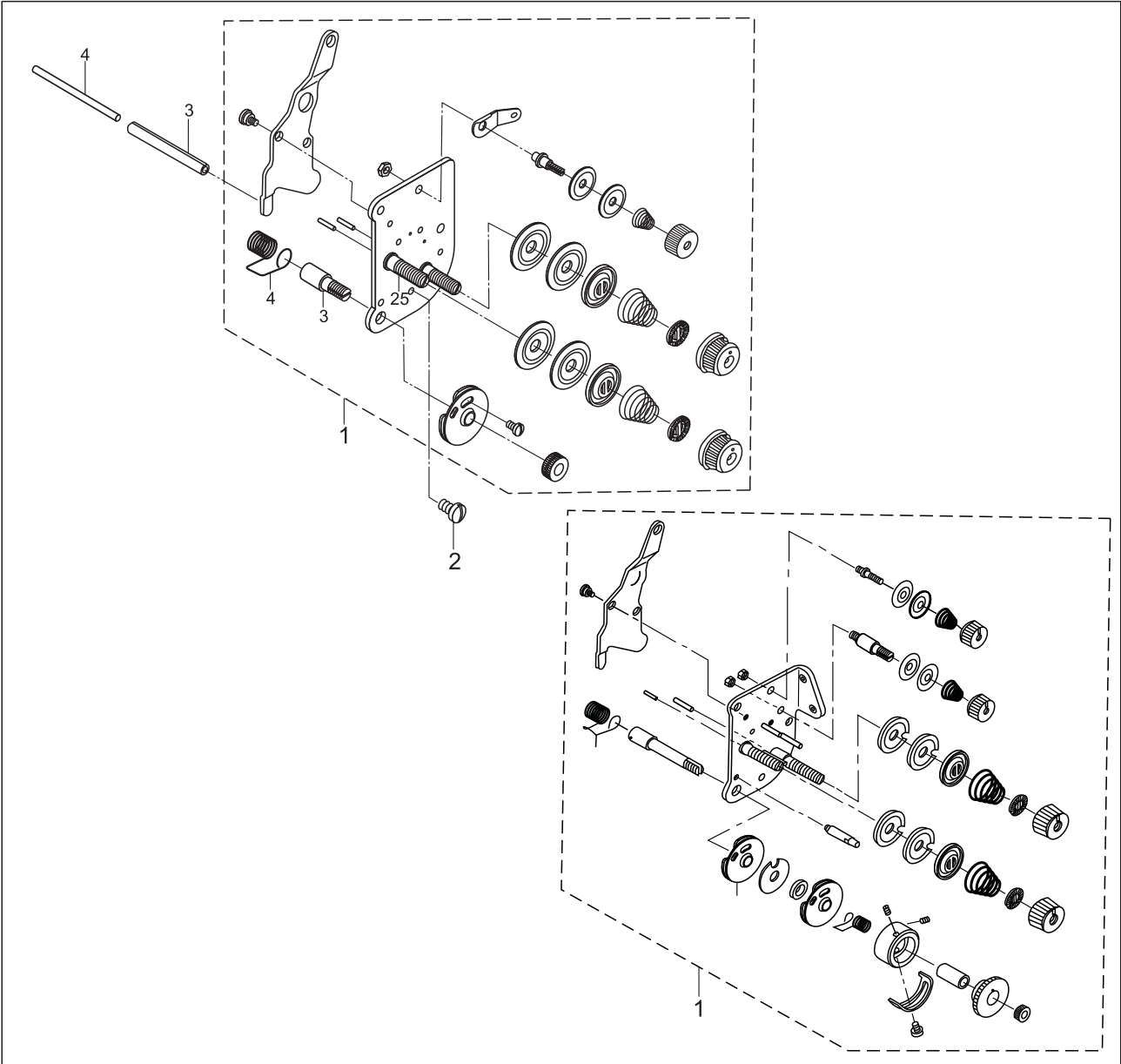
No.	Part Number	Name	Qt.		Remark
			20665L14D	20666L14D	
1	119WF2-005	Thread tension assy.	1	–	
	204WF2-009	Thread tension assy.	–	1	
2	1WF1-011	Screw	2	2	
3		Pin	1	1	GB/T 879.1 6×55
4	92WF2-020	Tension release pin	1	1	

8. Winding & tension components
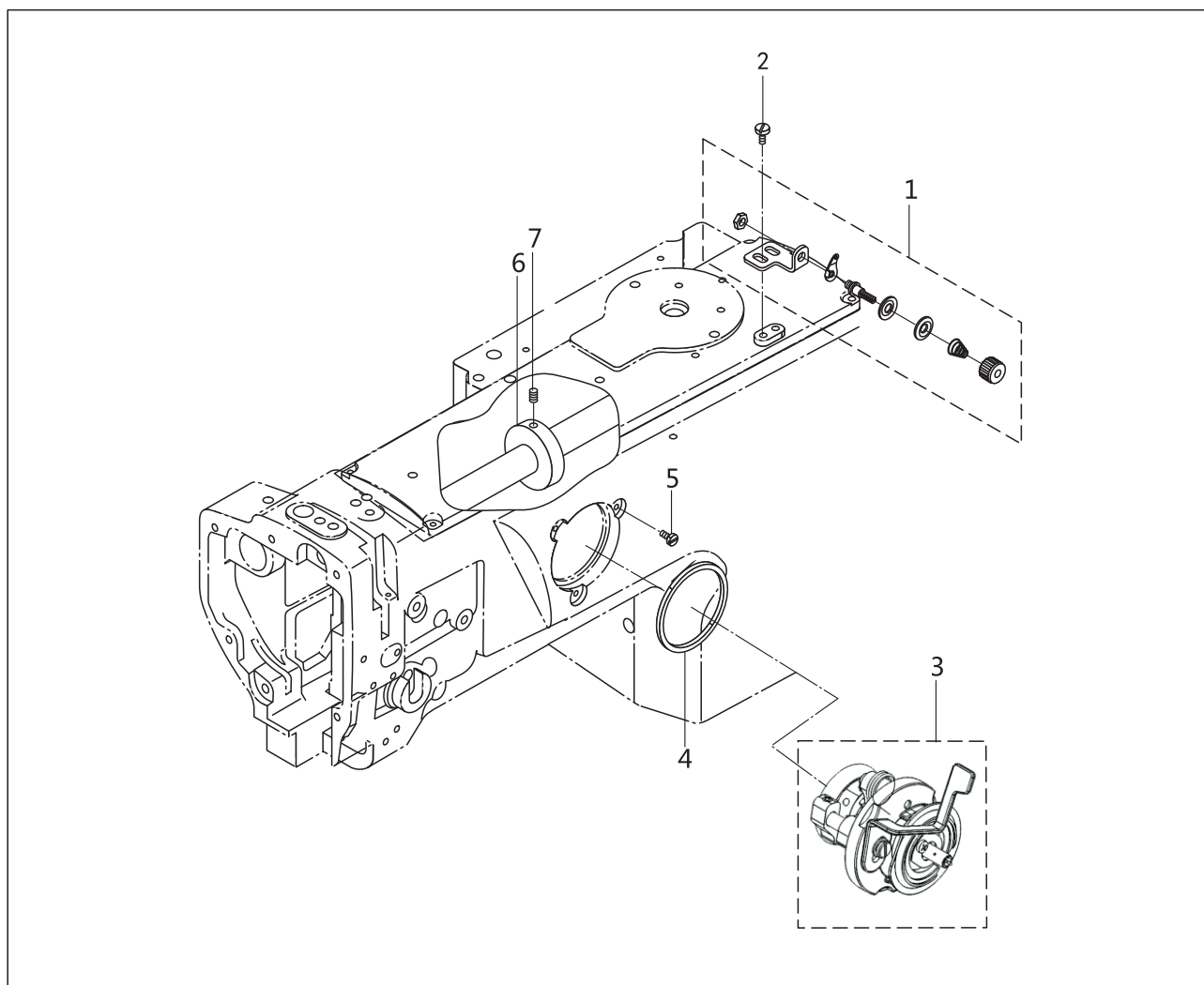
No.	Part Number	Name	Qt.		Remark
			20665L14D	20666L14D	
1	92WF2-021	Winding tension assy.	1	1	
2	13WF2-040	Screw	2	2	M4X8
3	385WF2-001	Bobbin winder	1	1	
4	92WF2-026	Seal	1	1	
5	92WF2-027	Screw	3	3	SM11/64"×40
6	92WF2-035	Friction wheel	1	1	
7	6K2-043	Screw	2	2	

9. Knee lifting mechanisms
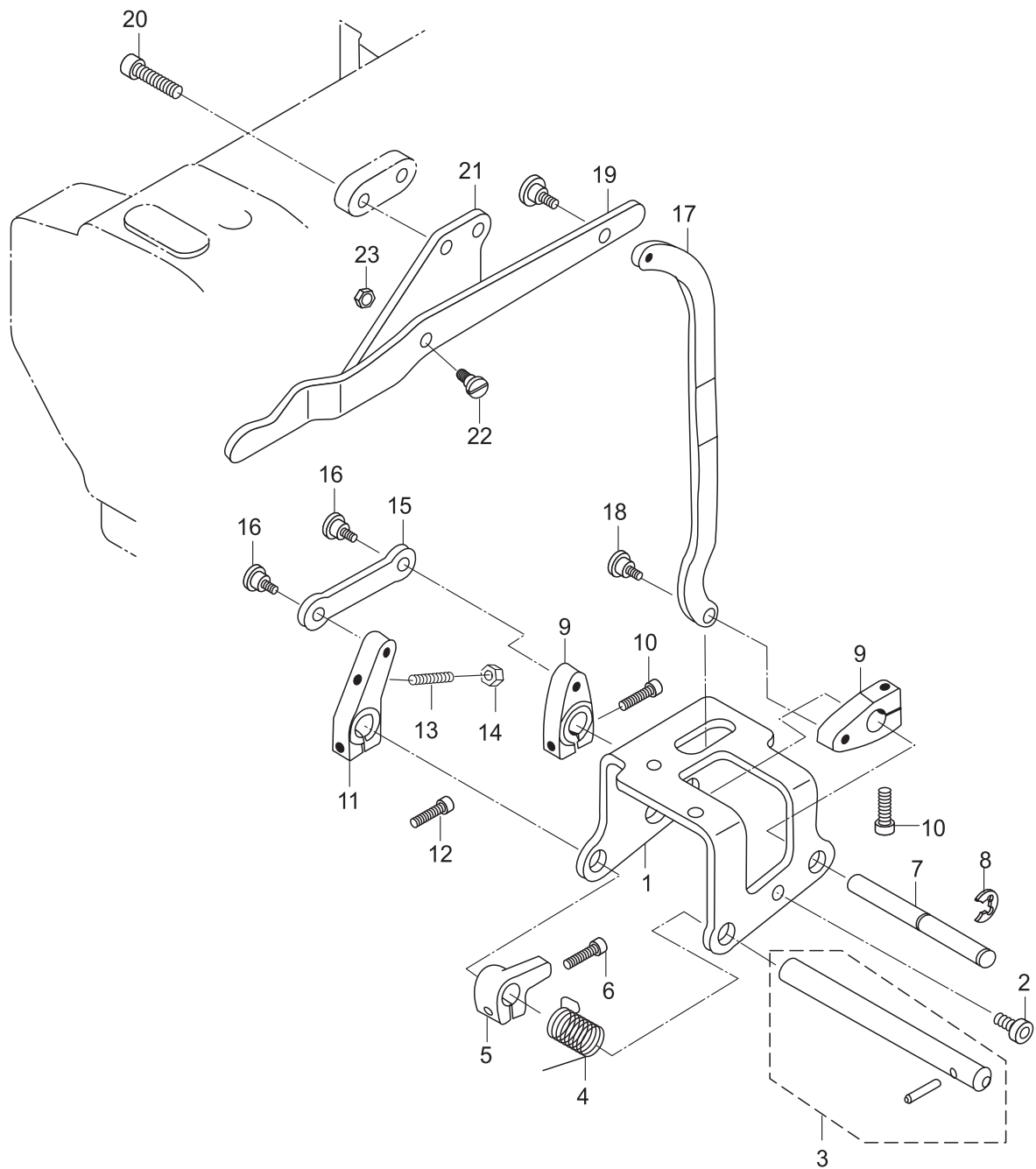
9. Knee lifting mechanisms

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	199WF5-001	Bracket	1	1	
2	52WF5-003	Screw	3	3	M6
3	199WF5-002	Shaft assy.	1	1	
4	199WF5-003	Twist spring	1	1	
5	199WF5-004	Crank	1	1	
6	B188004	Screw	1	1	GB/T70.1 M5×16
7	199WF5-005	Shaft	1	1	
8		Retaining ring	1	1	GB896 9
9	199WF5-006	Crank	2	2	
10	B188004	Screw	2	2	GB/T70.1 M5×16
11	199WF5-007	Driving crank	1	1	
12	B188004	Screw	1	1	GB/T70.1 M5×16
13	199WF5-008	Bolt	1	1	
14	72WF5-022	Nut	1	1	M5
15	199WF5-009	Link	1	1	
16	92WF4-016	Screw	2	2	
17	199WF5-010	Link	1	1	
18	92WF4-016	Connecting screw	2	2	
19	312WF4-001	Knee lift lever	1	1	
20	72WF2-009	Screw	2	2	
21	312WF4-002	Setting plate	1	1	
22	92WF4-014	Screw	1	1	
23	50WF3-012	Nut	1	1	

10. Lubrication components
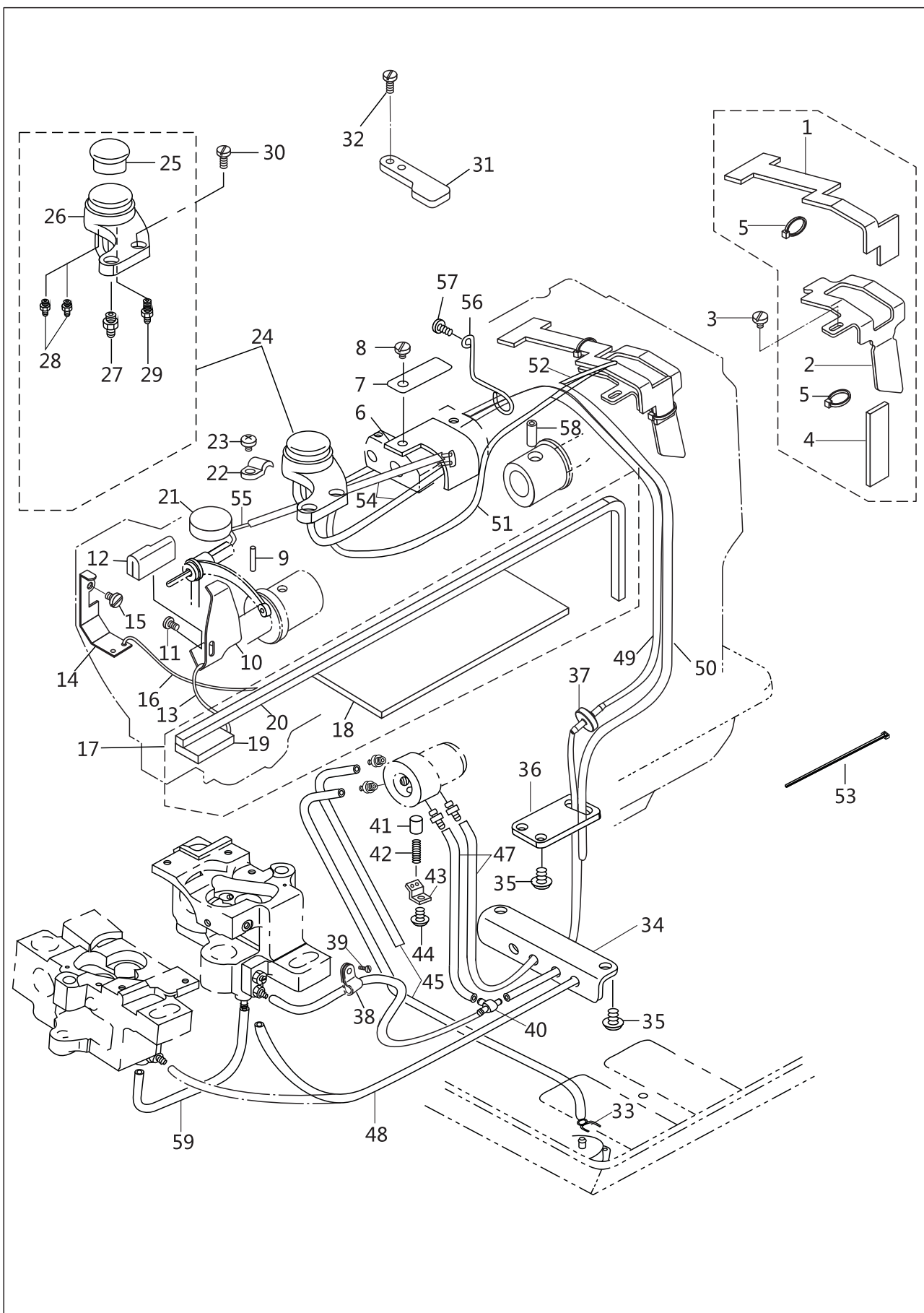
10. Lubrication components

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	92WF5-001	Oil felt	1	1	
2	92WF5-002	Bracket	1	1	
3	1WF1-011	Screw	1	1	SM11/64"×40
4	92WF5-003	Oil felt	1	1	
5	2KT7-001A	Band	2	2	
6	119WF5-003	Oil felt	1	1	
7	119WF5-001	Plate	1	1	
8	13WF2-014	Screw	1	1	
9	92WF5-010	Oil felt	1	1	
10	92WF5-011	Oil shield	1	1	
11	16WF1-059	Screw	1	1	SM9/64"×40
12	92WF5-012	Oil felt	1	1	Φ2×250
13		Oil wick	1	1	
14	92WF5-013	Oil shield	1	1	
15	36WF1-031D	Screw	1	1	SM11/64"×40
16		Oil wick	1	1	Φ2×250
17	312WF5-001	Oil felt assy.	1	1	
18	92WF5-014A	Felt	1	1	
19	92WF5-014B	Felt	1	1	
20	312WF5-001A	Oil wick	1	1	
21	92WF5-009	Felt	1	1	
22	1WF6-036	Clip	1	1	
23	17WF1-020	Screw	1	1	SM11/64"×40
24	199WF6-001C	Oil box assy.	1	1	
25	199WF6-001A	Oil window	1	1	
26	199WF6-001C1	Oil box	1	1	
27	199WF6-002	Connector	1	1	
28	199WF1-048	Connector	2	2	
29	199WF6-021	Connector	1	1	
30	1WF5-042	Screw	2	2	SM11/64"×40
31	92WF5-004	Plate	1	1	
32	W01111	Screw	2	2	SM15/64"×28
33	199WF6-017	Clip	1	1	
34	199WF6-003	Supporter	1	1	
35	27WF5-005	Screw	3	3	SM15/64"×28
36	199WF6-004	Supporter	1	1	
37	199WF6-023	Non-return valve	1	1	
38	80WF5-014	Clip	1	1	
39	1WF1-001	Screw	1	1	SM11/64"×40
40	199WF6-006	Tube connector	1	1	
41	199WF6-007	Piston assy.	2	2	
42	199WF6-008	Spring	2	2	
43	199WF1-058	Plate	1	1	
44	1WF6-026	Screw	1	1	SM11/64"×40
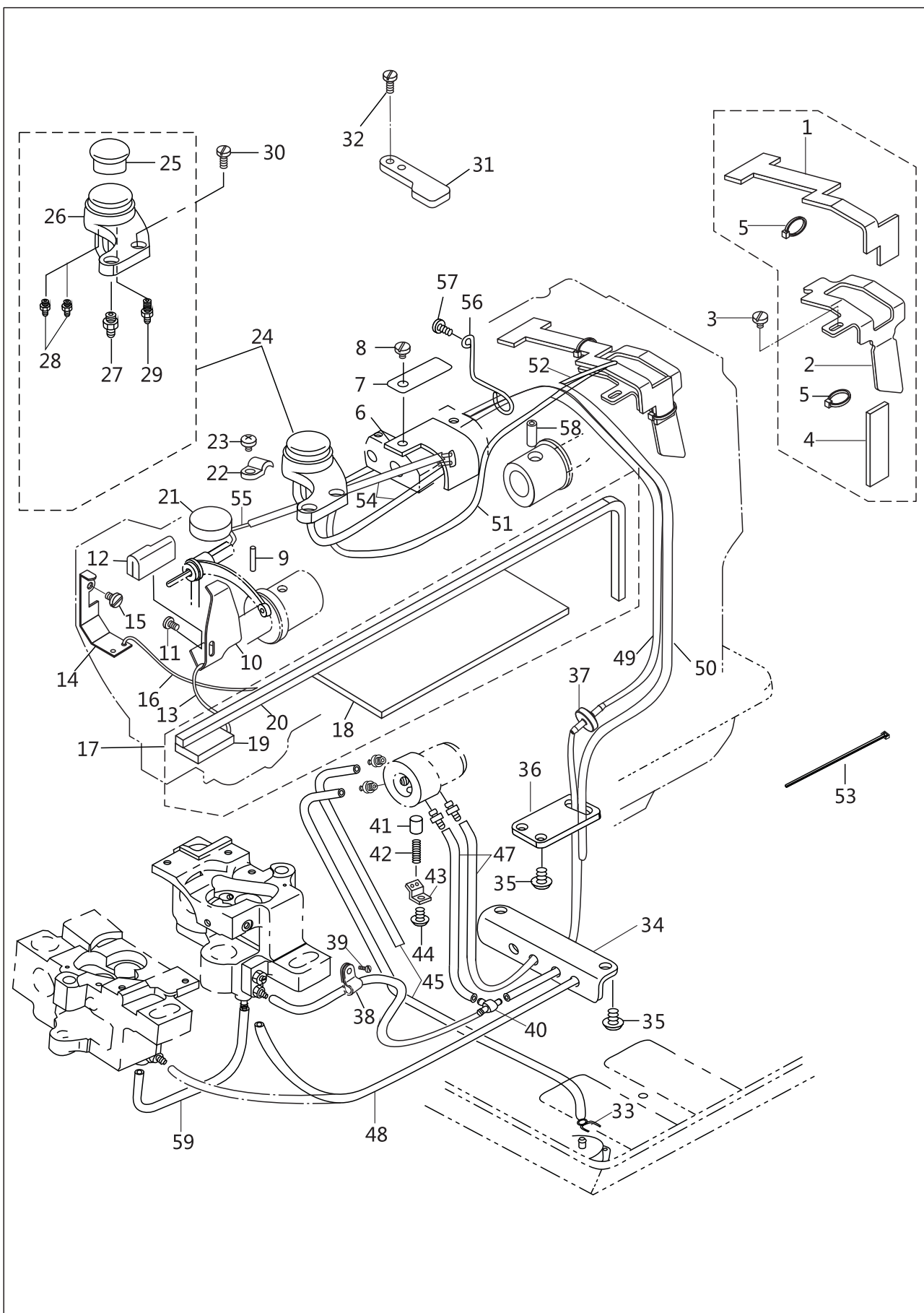
10. Lubrication components

10. Lubrication components

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
45	199WF6–010	Oil tube	2	2	Φ5×1 L=370
46	312WF5–002	Oil tube	1	1	Φ5×1 L=325
47	199WF6–011	Oil tube	2	2	Φ5×1 L=80
48	312WF5–003	Oil tube	1	1	Φ5×1 L=405
49	312WF5–004	Oil tube	1	1	Φ5×1 L=715
50	312WF5–005	Oil tube	1	1	Φ5×1 L=605
51	199WF6–016	Oil tube	1	1	Φ5×1 L=200
52	199WF6–019	Oil wick	1	1	Φ5×450
53	2KT7–001A	Band	11	11	
54	199WF6–018	Oil tube	1	1	Φ5×1 L=225
55	199WF6–019	Oil wick	1	1	Φ5×480
56	199WF6–020	Setting hook	1	1	
57	36WF4–017	Screw	1	1	
58	33T4–004	Oil tube	1	1	
59	204WF5–001	Oil tube	–	1	Φ5×100

11. Accessories
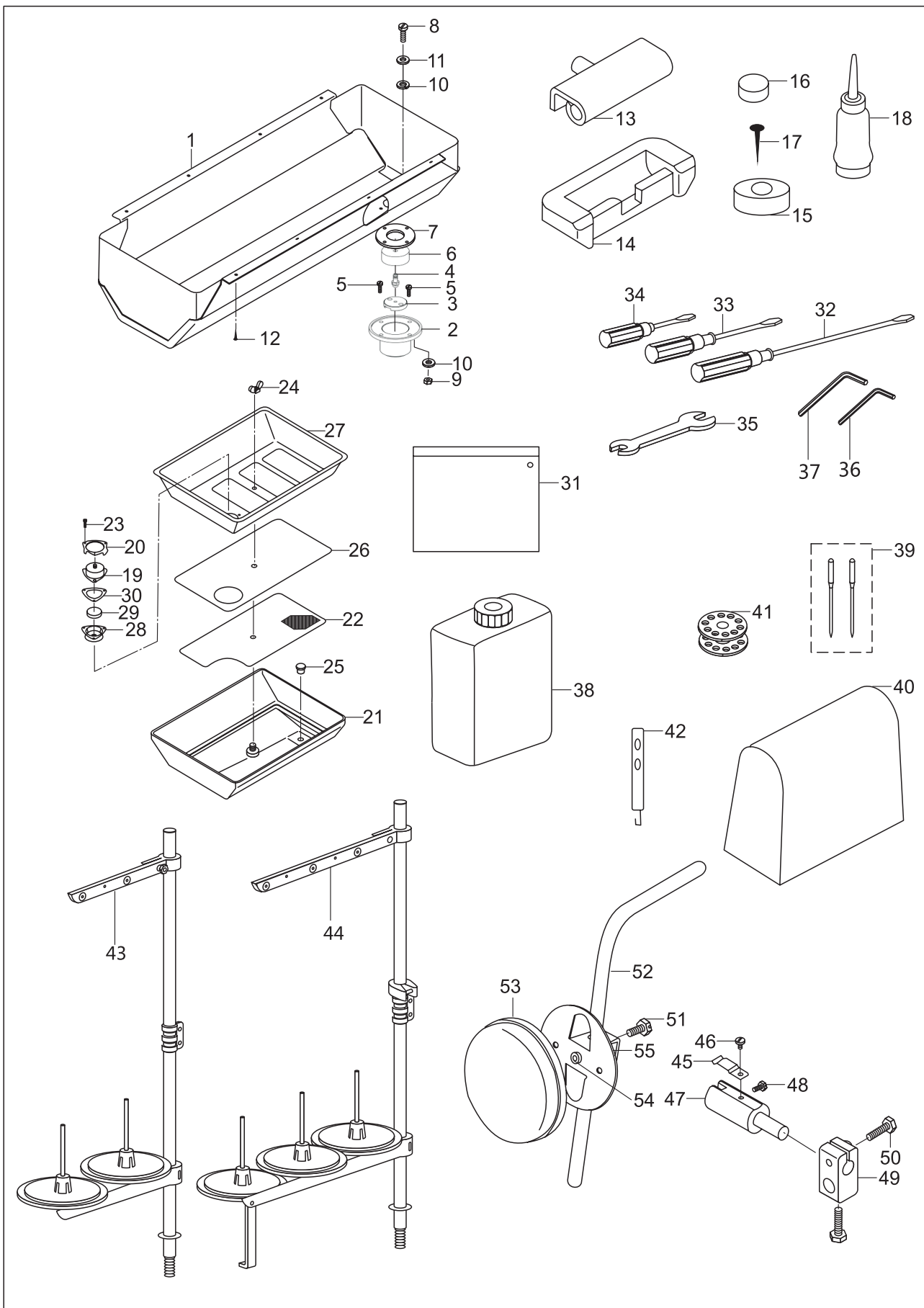
11. Accessories

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
1	312WF6-001	Big oil pan	1	1	
2	385WF5-002	Oil hopper	1	1	
3	385WF5-003	Oil post	1	1	
4	385WF5-004	Oil nozzle	1	1	
5	89WF2-016	Screw	2	1	M4×16
6	385WF5-005	Oil filter	1	1	
7	92WF6-019	Seal	1	1	
8		Screw	4	4	GB/T818 M3X14
9		Nut	4	4	GB/T6170 M3
10	92WF6-023	Seal	8	8	
11		Washer	4	4	GB/T95 3
12		Nail	4	4	SG162 L=19
13	22T9-007F1	Machine hinge	2	2	
14	22T9-007F2	Hinge cushion	2	2	
15	92WF6-025	Cushion	4	4	
16	92WF6-026	Oil felt	4	4	
17		Nail	6	6	SG162 L=19
18	33TF-011	Oil pot	1	1	
19	199WF7-003	Cap	1	1	
20	199WF7-004	Fix piece	1	1	
21	199WF7-005	Small oil pan	1	1	
22	199WF7-006	Supporter	1	1	
23		Screw	3	3	GB/T65 M2X10
24		Wing nut	1	1	GB62 M5
25	199WF7-007	Plug	1	1	
26	199WF7-008	Filter	1	1	
27	199WF7-009	Tray	1	1	
28	199WF7-010	Case	1	1	
29	199WF7-011	Magnet	1	1	
30	199WF7-012	Seal	1	1	
31	33TF-010	Accessories bag	1	1	
32	33TF-012	Screwdriver	1	1	
33	33TF-013	Screwdriver	1	1	
34	33TF-014	Screwdriver	1	1	
35	92WF6-028	Wrench	1	1	9X10
36		Inner hexagon spanner	1	1	GB/T5356 2.5
37		Inner hexagon spanner	1	1	GB/T5356 3
38	1F-012	Oil pot	1	1	
39		Needle	10	10	DPX17 23#
40		Machine head cover	1	1	83X40
41	1WF2-065	Bobbin	3	6	
42	92WF2-037	Thread guide	1	1	
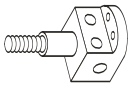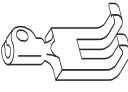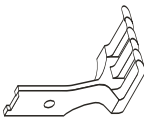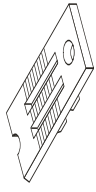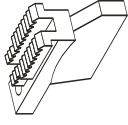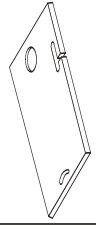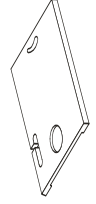
11. Accessories
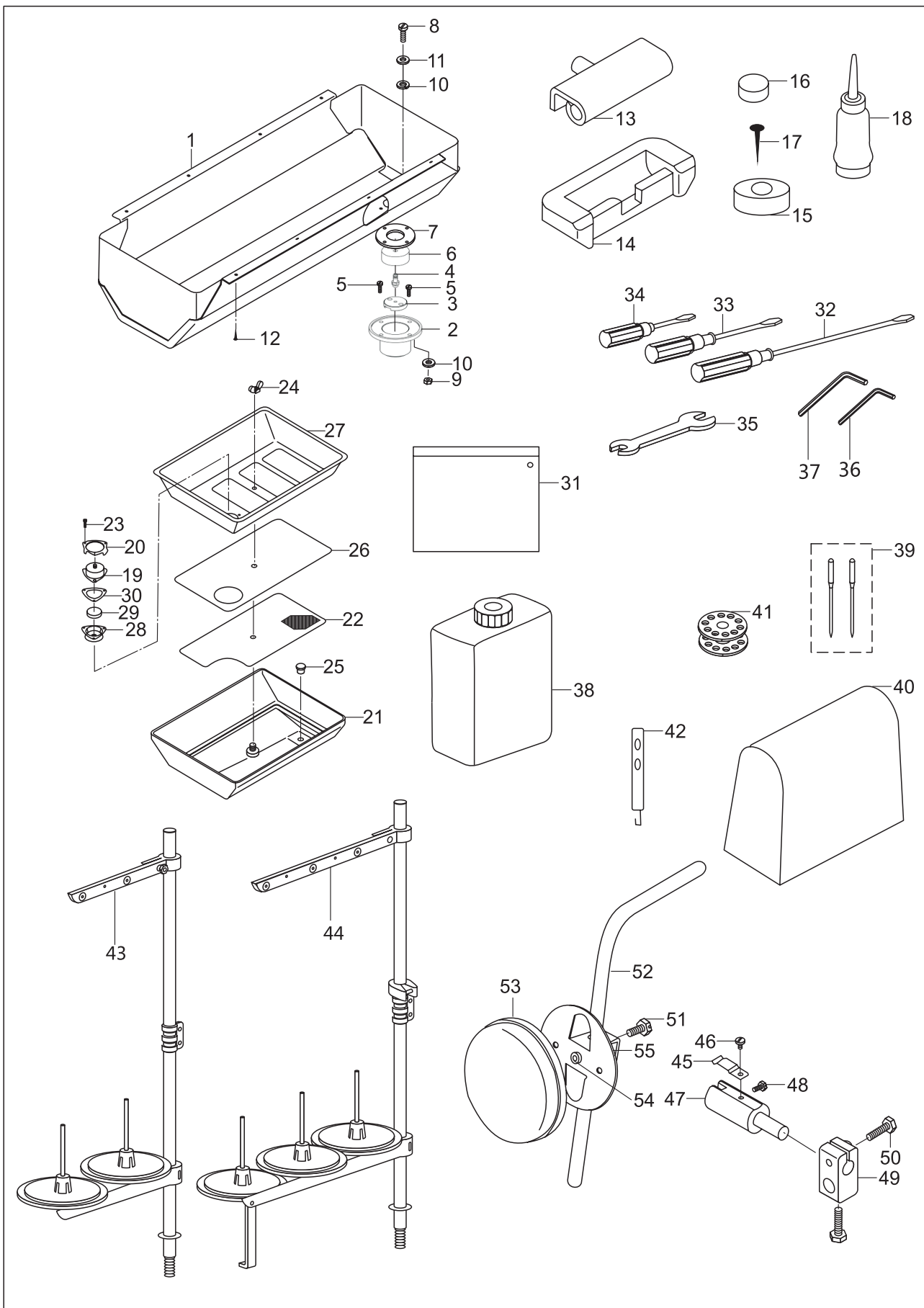
11. Accessories

No.	Part Number	Name	Qt. 20665L14D	Qt. 20666L14D	Remark
43	14F0−00	Thread stand	1	−	
44	1F−014	Thread stand	−	1	
45	199WF7−014	Spring plate	1	1	
46	21WF7−015	Screw	1	1	SM9/64"X40
47	199WF7−015	Connector	1	1	
48	1WF5−010	Screw	1	1	
49	199WF7−016	Jointer	1	1	
50		Screw	2	2	GB/T5781 M6X25
51	22T9−003B7	Screw	1	1	
52	199WF7−017	Bent bar	1	1	
53	22T9−003B8	Pad	1	1	
54	22T9−003B5	Plate	1	1	
55	22T9−003B6	Jointer	1	1	

Table of gauge sets of GC20666L14D

	Needle clamp	Walking foot	Presser foot	Needle plate	Feed dog	Slide plate(L)	Slide plate R
3/16	204WF3-004D	204WF4-001D	204WF4-002D	204WF2-003D	204WF3-010D	204WF2-005A	204WF2-006A
1/4	204WF3-004C	204WF4-001C	204W4F-002C	204WF2-003C	204WF3-010C	204WF2-005A	204WF2-006A
5/16	204WF3-004F	204WF4-001F	204WF4-002F	204WF2-003F	204WF3-010F	204WF2-005A	204WF2-006A
3/8	204WF3-004E	204WF4-001E	204WF4-002E	204WF2-003E	204WF3-010E	204WF2-005B	204WF2-006B
1/2	204WF3-004G	204WF4-001G	204WF4-002G	204WF2-003G	204WF3-010G	204WF2-005B	204WF2-006B
1	204WF3-004J	204WF4-001J	204WF4-002J	204WF2-003J	204WF3-010J	204WF2-005C	204WF2-006C
1-1/4	204WF3-004K	204WF4-001K	204WF4-002K	204WF2-003K	204WF3-010K	204WF2-005C	204WF2-006C

INSTRUCTION MANUAL

QD693S SYSTEM

Please read this manual before using the Controller

Please keep this manual within convenience access for easy reference

Version: V.1.00

⚠ Safety Instruction

1）Users are required to read the operation manual completely and carefully before installation or operation.

2) The product should be installed and pre-operated by well trained persons

3) All the instruction marked with sign ⚠，must be observed or executed; otherwise, bodily injuries might occur.

4) For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection

5） When connecting power supply cords to power sources, it is necessary to make sure that the power voltage is lower than 250V AC and matches the rated voltage indicated on the motor's name plate.

※Attention: If the Control Box is AC 220V system, please don't connect the Control Box to AC 380V power outlet. Otherwise, the error will occur and motor will not work. If that happens, please turn off the power immediately and check the power voltage. Continue supply 380V power over 5 minutes might damage the fuse F2, burst the electrolytic capacitors and the power module U14 of the main board and even might endanger the person safety.

6) Please don't operate in direct sun light, outdoors area and where the room temperature is over 45℃or below 0°C.

7) Please avoid operating near the heater at dew area or at the humidity below 10% or above 95%.

8) Please don't operate in area with heavy dust, corrosive substance or volatile gas.

9) Avoid power cord being applied by heavy objects or excessive force, or over bend.

10）The earth wire of power cord must be connected to the system ground of the production plant by proper size of conductions and terminals. This connection should be fixed permanently.

11) All the moving portions must be prevented to be exposed by the parts provided.

12) Turing on the machine in the first time, operate the sewing machine at low speed and check the correct rotation direction.

13) Turn off the power before the following operation：

1. Connecting or disconnecting any connectors on the control box or motor.

2. Threading needle.

3. Raising the machine arm.

4. Repairing or doing any mechanical adjustment.

5. Machine is out of work.

14) Repairing and high level maintenance work should only be done by electronic technicians with appropriate training.

15) All the spare parts for repairing work must be provided or approved by the manufacturer.

16) Don't use any objects to hit or ram the product.

Guarantee Time

Warranty period of this product is 1 year dated from purchasing, or within 2 years from ex-factory date.

Warranty Detail

Any trouble found within warranty period under normal operation, it will be repaired free of charge.

However, maintenance cost will be charged in the following cases even if within warranty period:

1. Inappropriate use, including: wrong connecting high voltage, wrong application, disassemble, repair, modification by incompetent personnel, or operation without the precaution, or operation out of its specification range, or inserting other objects or liquids into the product.

2. Damage by fire, Earth quake, lighting, wind, flood, salt corrosive, moisture, abnormal power voltage and any other damage cause by the natural disaster or by the inappropriate environments.

3. Dropping after purchasing or damage in transportation by customer himself or by customer's shipping agency.

* Note: We make our best effort to test and manufacture the product for assuring the quality. However, it is possible that this all a failsafe device. （Such as residual current breaker).

1 Installation

1.1 Power Connection

⚠ **For countries or regions with unstable power supply, it is proposed to install a power stabilizer.**

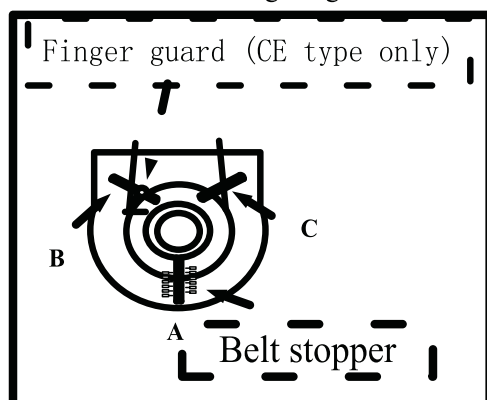## 1.2 Motor Installation:

1.21 Installation of External Motor

FOR USA BASE   FOR CABLE   FOR DIN BASE

Drill 9mm hole   216   Drill 40mm hole   70   190

Table   57   105   70   Table   57   105
66   70

Oil Tank   Oil Tank   Oil Tank
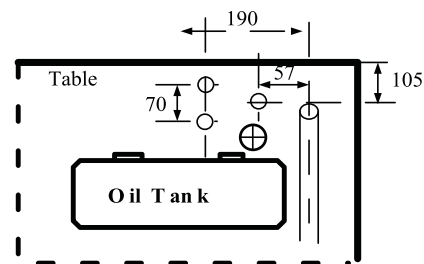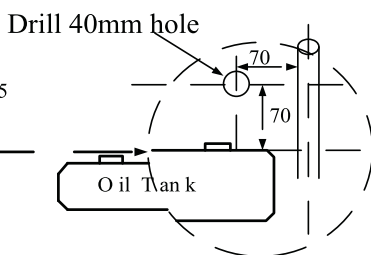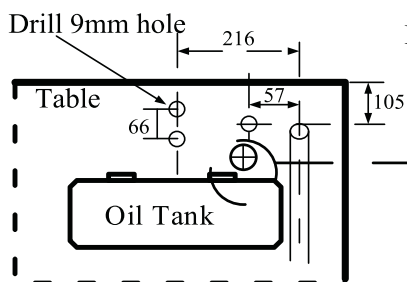
Recommended Drilling Diagram

Finger guard (CE type only)

B   C

A   Belt stopper

As shown in the diagram above, after drilling 3 -Φ9mm holes and 1 -Φ40mm hole on the machine table, install and fix the motor under the table, and NOTICE::

1）Pulleys of motor and machine must properly align.

2）Cable pass through under the working table must be secured to avoid the V-belt to be rubbed.

Installation and Adjustment of Belt Cover

a) Adjust the stopper A on the cover properly and leave about 5-10mm space from the v-belt.

b) As factory defaults, [Finger Guard] is set at position B to avoid rubbing with the v-belt and pulley.

1.2.2 Installation of Internal Motor

1 2   3   4
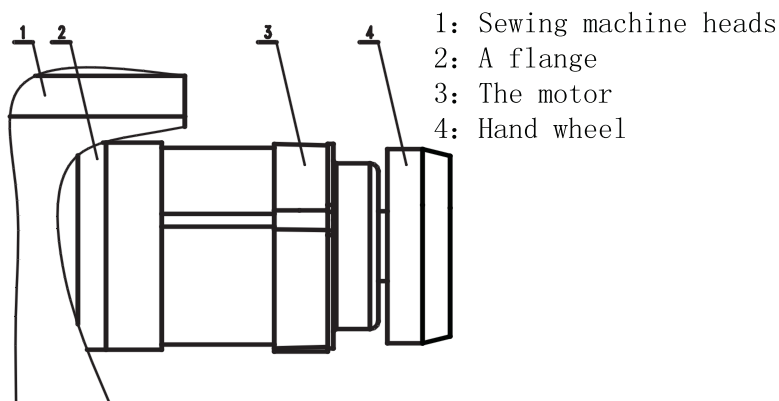
1：Sewing machine heads
2：A flange
3：The motor
4：Hand wheel

1.3 Installation and Adjustment of Synchronizer

a) Installation: Mount the synchronizer onto the flange of machine pulley and fasten the rotor by fixed screws so that no vibration is found at rotating.

b) Adjustment: Release the fixed screws on the top shell and remove the top shell.

c) Needle Up/Down Positioning Adjustment：Aim the green mark toward the fixed point on the machine head. If it is not accurate, adjust the location magnets of Needle Up/Down. (Refer to Parameter Mode B)

⚠ **Attention:** Make sure the power is off before the installation.

1.4 Adjust The Force Required To Operate The Foot Pedal

For General Application	For Venturi Device Attached
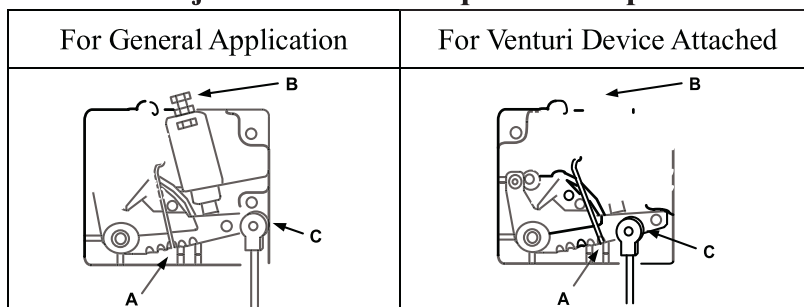
Spring A: Downward force adjustment

Bolt B: Heeling back force adjustment

Hole C： Pedal stroke adjustment

∴In case of connecting with an air switch on the pedal rod to activate a Venturi Device, please shift the position for A and C as shown below.

1.5 Comparison Table of LCD Display Fonts and Actual Fonts

Arabic Numerals：

Actual	0	1	2	3	4	5	6	7	8	9
Display	0	1	2	3	4	5	6	7	8	9

English Alphabet

Actual	A	B	C	D	E	F	G	H	I	J
Display	A	b	C	d	E	F	G	H	ı	J
Actual	K	L	M	N	O	P	Q	R	S	T
Display	t	L	Π	n	o	P	q	r	S	ſ
Actual	U	V	W	X	Y	Z				
Display	U	u	H	II	Y	Ξ				

1.6 Upper and lower stop debugging, Slow start joint debugging
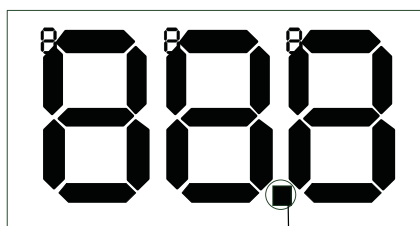
In normal operating interface, when the button [icon] on the screen the indicating lamp was lit in the parking position, the indicator light is off the time parking for lower needle stop
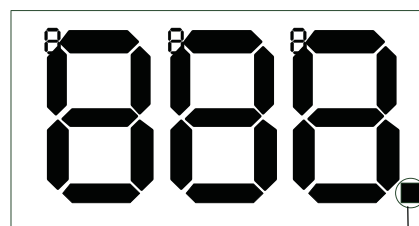
In normal operating interface, when the button [icon] on the screen the indication lamp is lit up the slow play slot open, the indicating lamp is off the slow play off the seam.

2　　　Keys function

Entering and saving the parameter value	**S**	Enter into the parameter value and save the changed parameter values.
Entering the parameter mode	**P**	Press the P key in the Normal Mode can enter into the Users Parameter Mode(parameter value in Parameter Table 4.1)Press the P key and turn on the power can enter into the Technician Parameter Mode(parameter value in Parameter Table4.2)
On the adjustment key	▲	1. Choose the region parameter items incrementing key 2. Parameter setting value incrementing key 3. Select the shortcut needle position
Under the adjustment key	▼	1. Choose the region parameter items of diminishing key 2.Is decremented key parameter settings 3. Slow play seam selection shortcuts

3　　　Operating instructions

3.1　　Reset the system

Press and hold the upper and lower adjustment key while turning the power	Press [S] to confirm; shutdown restart

3.2　　Enter the user argument and save changes

Under normal mode Press [P] to enter user parameters	Press the upper and lower adjustment key; modify parameter items	Press [S] key to enter	Press the upper and lower adjustment key; modify parameter values	Press [S] key to confirm the save

3.3　　Enter technician mode and save changes

Press and hold the [P] key to boot into the technician parameters	Press the Up and Down keys to adjust; Modify parameter items	Press [S] key to enter	Press the Up and Down keys to adjust; modify parameter values	Press [S] key to confirm the save

3.3　　Automatic Scaling

Press [P], [S] key to turn the display [P19]	Press the adjustment key raised to [P22]	Press [S] key to enter automatically find the ratio	Press the Up or Down keys to adjust; automatically find proportion a circle	Press [S] key to confirm the save

⚠ Note: under the hang machine model (fission) due to the size of the head pulley different proportion are not allowed to be out of control phenomenon for parking, after installed at this time to let control system automatically find proportion, shut electric restart

3.4 Software correctional

Press [P], [S] key to turn the display [P19]	Press the button raised to [P27], press [S] to enter the on positioning setting mode	Turn handwheel; adjusted to on location; press [S] to confirm saving	Press [P]; adjusted [P28] Press [S] to enter; lower positioning setting mode	Turn the hand wheel; adjusted to lower location; press [S] to confirm saving

4 User Parameter &Technician Parameter
4.1 User Parameter

Parameter	Parameter Function	Range	Default	Key	Description
P01	Maximum speed	010-400	200		set the max sewing speed (show the actual number *10= speed)
P02	needle stop position selection	000-001	001		Set the needle stop position(0: needle up 1:needle down)
P03	soft start switch	000-001	001		soft start switch setting(0:OFF 1: ON)
P04	soft start sewing speed	010-150	040		soft start sewing speed setting(show the actual number *10= speed)
P05	stitches number of soft start	000-099	004		set the stitches number of soft start, each unit is half stitch
P06	motor rotate direction	000-001	001		motor rotate direction setting (0:clockwise 1:counter-clockwise)

4.2 Technician Parameter

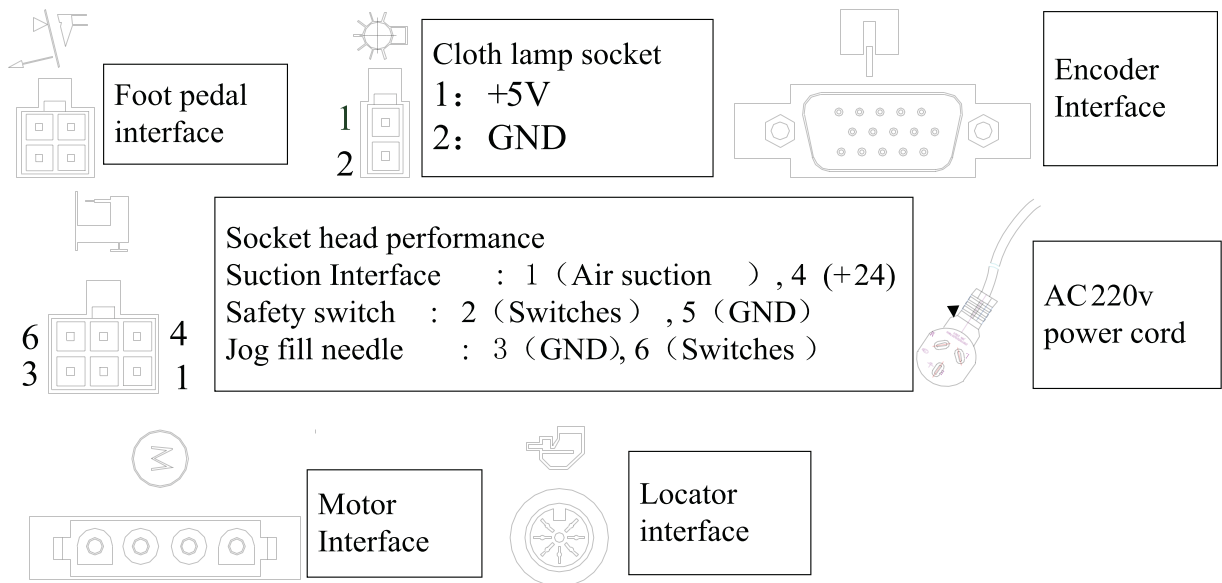| Parameter	Parameter Function	Range	Default	Key	Description
P08	Synchronizer type selection	000-001	000		Synchronizer typesetting (0: single position 1:double position) (motor with belt pulley)
P09	auto running speed	010-600	200		auto running speed setting(show the actual number *10= speed)
P10	auto running time	001-250	020		set the auto running time in testing
P11	auto running stop time	001-250	020		set the auto running stop time in testing
P12	Item A test	000-001	000		Item A test setting(continue running with constant speed)
P13	Item B test	000-001	000		Item B test setting(carry out the set loop running)
P14	Item C test	000-001	000		Item C test setting(carry out the unset running)
P15	Machine Protection Switch Testing	000-002	001		0：Disable；1：Testing zero signal；2：Testing positive signal
P16	No positioning mode selection	000-001	000		0: the positioning mode 1: no positioning mode
P17	setting the up of location	040-250	015		
P18	setting the down of location	040-250	015		
P20		100-7000	200		

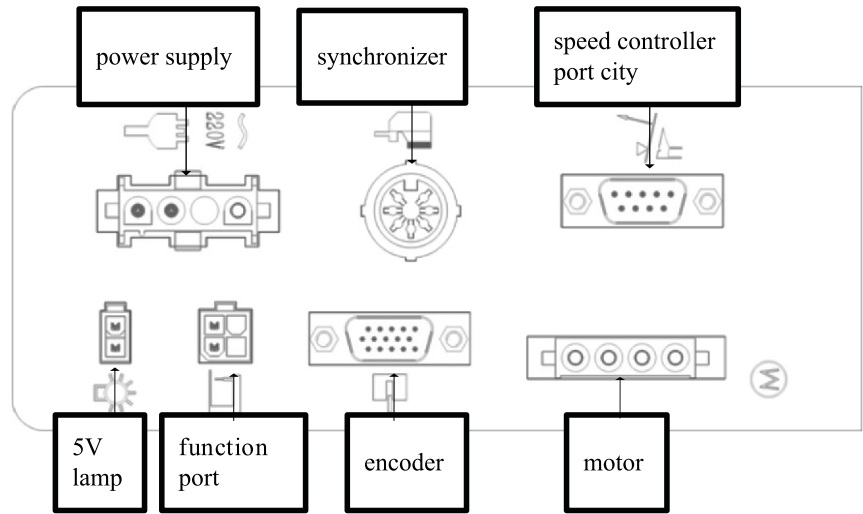| P22	Automatic	0-1	0		The parameter to 1 will automatically find the ratio of a circle parameters will be change to 0
P23	Speed ratic	1-100	10		
P24	Slowest	210-400	210		
P25	Stop driving Intensity	1-031	18		
P26	Pedal value display				Check the speed control signal.
P27	Manually positioning adjustment				Press S to save the positioning is the default value by turning the handwheel find after positioning.
P28	Under manual positioning adjustment				Press S to save the default value is lower locating turn hand wheel to find the next after positioning.

5   Error Code Table：

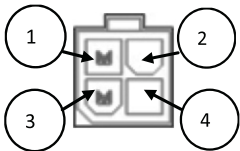| Error	Problem	Measurement
E1	Power Module is faulty. Abnormal over current or voltage. Resistor is damaged or F1 fuse is blown.	System will be shut down until the power resets on. Please check the power board in detail.
E7	a) Bad connection at the motor connector. Synchronizer signal error. Machine locked or object stuck in the motor pulley. Sewing material is too thick. Module output is abnormal.	Module driver output and sewing machine head output should be shut down until the power reset on. (Please check the sewing machine is jammed or synchronizer, motor, module driver single is abnormal.)
E9	Synchronizer signal error.	Please check the needle up and needle down position single is normal or the belt pulley is too loose.
E11	Auto needle position up when the power on. The synchronizer has connected to the control box, but the needle signal can't be sent out.	Motor still can run, but it automatically starts the no synchronizer mode. All constant-stitch sewing pattern and trimmer /wiper function is invalid. Please check the synchronizer.
E12	Power is turned on without the synchronizer signal.	Motor still can run, but it automatically starts the clutch mode. All constant-stitch sewing pattern and trimmer /wiper function is invalid. Please check the synchronizer.
E13	Overheat Protection for Power Module	Please check the connection between power module and heat sink
E14	Encoder signal error	Please check the encoder signal or change the encoder.
E15	Abnormal over current protection for Power Module	Module driver output and sewing machine head output should be shut down until the power reset on. Please check the power board in detail .
E17	Machine head switch position error	Please check if the machine head is raised or if the machine head switch is damaged.

6   Schematic diagram of port

6.1.1   QD693 Each port name：

Foot pedal interface

1
2

Cloth lamp socket
1：+5V
2：GND

Encoder Interface

6   4
3   1

Socket head performance
Suction Interface   :   1（Air suction   ）, 4 （+24)
Safety switch   :   2（Switches） , 5（GND）
Jog fill needle   :   3（GND）, 6（Switches ）

AC 220v power cord

Motor Interface

Locator interface

6.1.2   QD683G   Each port name：

power supply

synchronizer

speed controller port city

5V lamp

function port

encoder

motor

4P function port

Head Protection	Suction Relay
1	2（+30v）
3	4（0v）

6.1.3　　　QD603G　Each port name

5V Lamp

Speed controller port city

Power supply

Lamp Port

			5V Lamp　Port
4	**3**	**2**	**1（GND）**
8	**7**	**6**	**5（+5V）**

6.1.4　　　QD888G　Each port：

Synchronizer

Needle selection box port city

5V Lamp

Encoder

Motor