TYPICAL

GC0316C
GC0332A

TOP AND BOTTOM FEED DIGITALIZED LOCKSTITCH SEWING MACHINE

OPERATION INSTRUCTION / PARTS MANUAL /SYSTEM MANUAL

CONTENT

Operation Instruction

Parts Catalogue

Operation Instruction

1. Brief introduction

This machine is designed with link type feed mechanism and link lever thread take–up mechanism and full lubrication by pump. It's suitable for sewing leather, canvas and other heavy weight materials, such as suitcase, car seat, tent, sofa, etc.
It's reliable and accurate on such functions as thread trimming, needle positioning, etc.

2. Main specifications

Model		GC0313C	GC0332A
Applications		Medium & heavy weight materials	
Max sewing speed		2500 s.p.m	
Max stitch length		9mm	
Needle bar stroke		37mm	
Lifting amount of presser feet		3.5–5.5mm	
Needle		DPx17 23#	
Presser foot lifting height	By hand	8mm	
	By knee	16mm	
Hook		Large lubrication hook	
Lubrication		Automatic lubrication	
Motor power		750W	

3. Installing the oil pan (Fig.1)

1.Insert the two head cushion② into the front corners of the oil pan①;
2.Insert the two head cushion③ into the back corners of the oil pan①;
3.Place the oil pan④ into the cutouts of table;
4.Insert the two rubber cushion⑤ into the notches of table.

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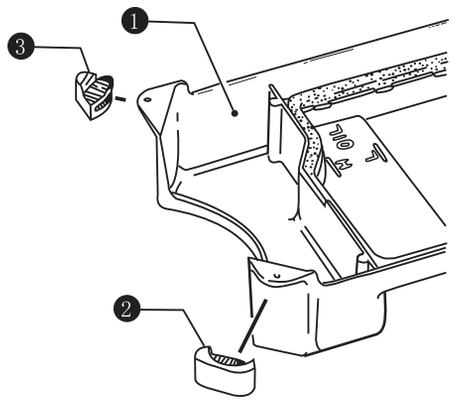

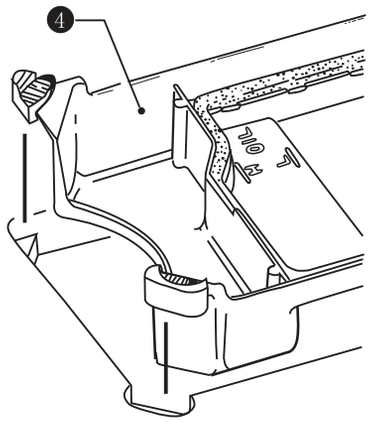

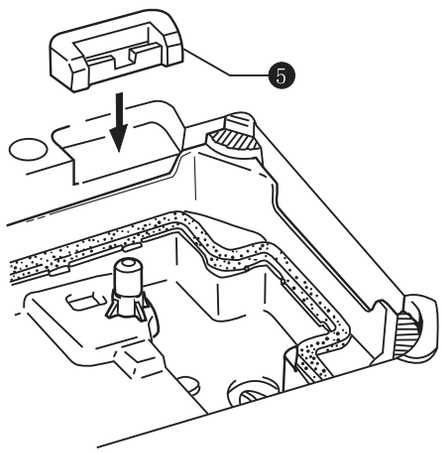

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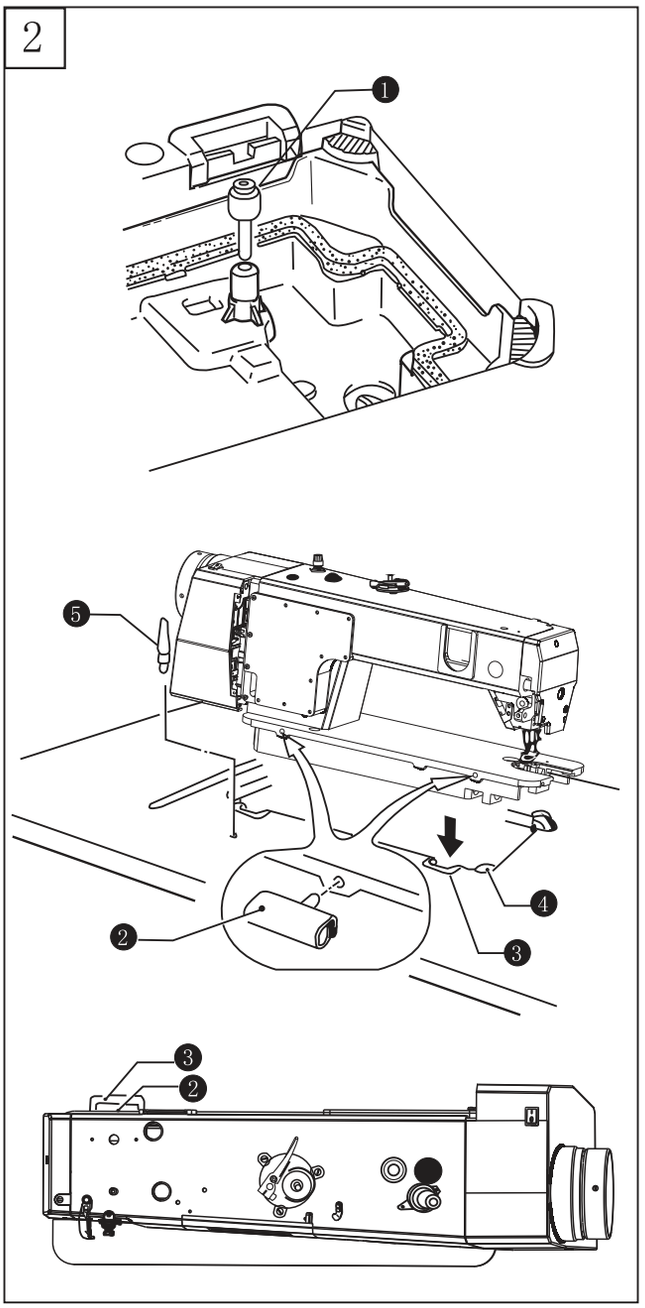

4. Installing the machine head (Fig.2)

1.Insert the knee lifter lifting bar①.

2.Insert the two hinges② into the holes in the machine bed.

3.Clamp the two hinges onto the rubber cushions③ in the work table, and the place the machine head onto the head cushions ④ which are on the top of the oil pan corners.

4.Tap the rest bar⑤ into the table hole.

NOTE: Tap the rest bar securely into the table hole, if not, the machine head will not be safe when it is tilted back

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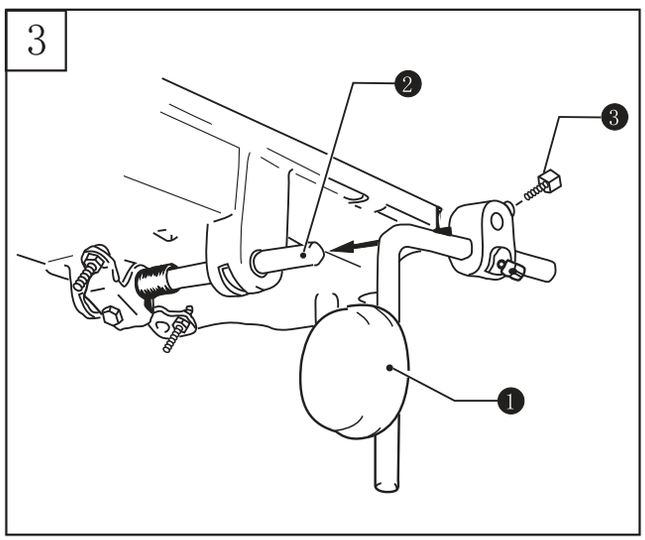
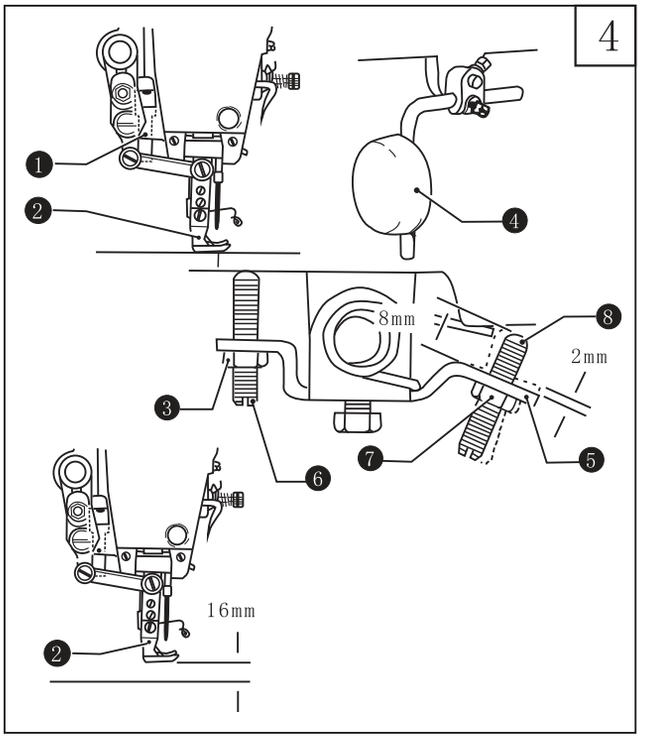


5. Installing the knee lifter assy. (Fig.3)

Insert the knee lifter assy.① into the shaft② under the oil pan, and slightly tight the screw③.

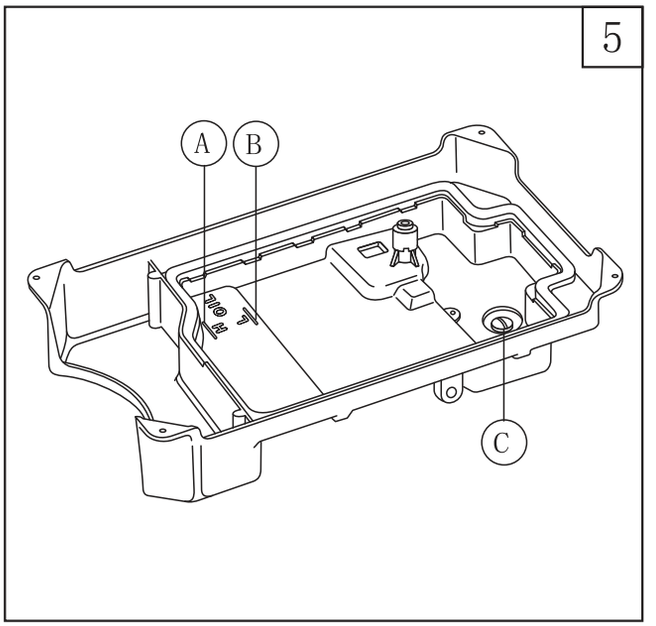
6. Adjusting knee lifter(Fig.4)

1.Lower the presser foot ② by turning the presser foot bar lifter①.
2.Loosen the nut③.
3.Turn the screw⑥ to adjust the bracket⑤ to 2mm play.
4.Securely tighten the nut③.
5.Loosen the nut⑦.
6.Turn the screw⑧until the distance between the end of the screw and bracket is approximately 8mm.
7.Turn the adjusting screw⑧to adjust, so that the presser foot is at the desired position within a distance of 16mm above the needle plate when the knee lifter plate④is fully pressed.
8.After adjustment, tighten the nut ⑦.



7. Lubrication(Fig.5)

1.Oil amount
Please fill the oil according to the mark indicated on the oil pan. Mark (A) means the highest position. Mark (B) means the lowest position. If the oil amount is lower than the Mark (B), oil will not be pumped and machine will be jammed.
2.Fill the oil
Please fill the 18# sewing oil into the oil pan until to the Mark (A)
3.Change the oil
①Uninstall the screw (C), and drain out the used oil
②Clean the oil pan, and tighten the screw (C), fill the fresh oil again according the requirement.



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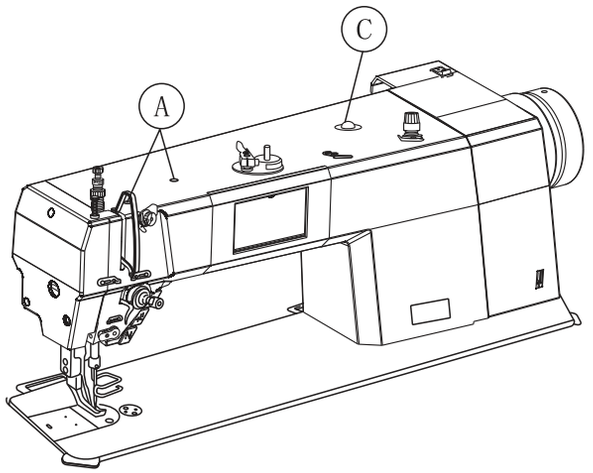

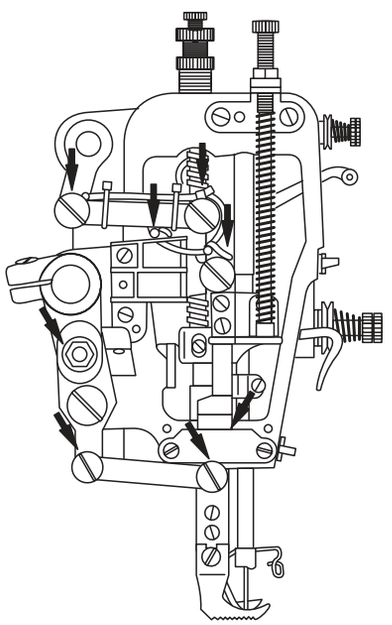

8. Test operation(Fig.6)

Carry out the test operation when start up a new sewing machine for the first time, or restart after a long period of non–use.
Remove the rubber cap (A) on the top of the arm and face plate, fully lubricate the parts showed by the arrows.
Install the face plate again, lift the presser foot and operate the machine at a lower speed of 1000–1500spm, and observe the oil running through the oil gauge window.
After one month, then the speed can be increased according to the different sewing operation.

9. Installing the needle (Fig.7)

1.Turn the machine pulley to move the needle bar① to its highest position;
2.Loosen the screw②
3.Insert the needle③ in a straight line as far as it will go, making sure that the long groove on the needle is at the left, and then securely tighten the screw②

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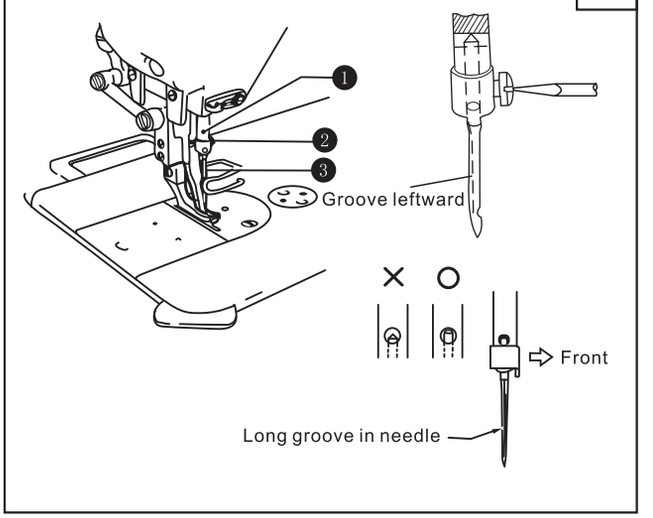

10. Removing the bobbin case(Fig.8)

1.Turn the machine pulley to lift the needle bar to its highest position. Pull the latch①of the bobbin case upward and then put the bobbin into the bobbin case, finally insert the complete bobbin case with bobbin into the hook shaft.
2.To remove the bobbin case, pull the latch and draw the bobbin case out of the hook.

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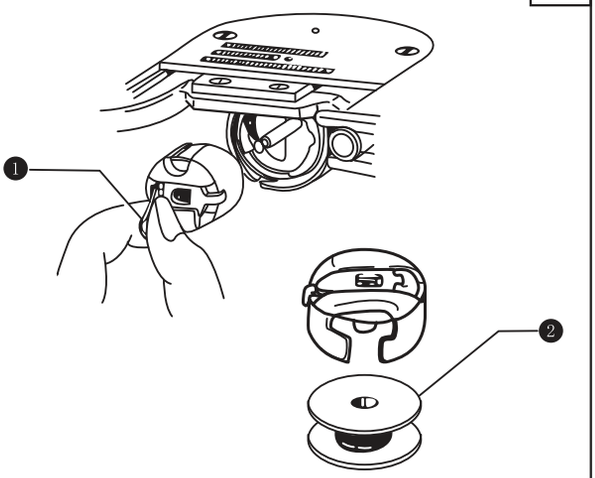

11. Winding the bobbin thread (Fig.9)

1.Turn the power on;
2.Place the bobbin①onto the bobbin winder shaft②;
3.Wind the thread several circles around the bobbin in the direction indicated by arrow;
4.Push down the bobbin presser arm③;
5.Lift the presser foot;
6.Depress the treadle, the winding operation will start;
7.Once finished, the bobbin presser arm③will release automatically.
＊If the thread winding is not neat and even, loosen the screw④to adjust the position of bobbin presser arm③
＊Turn the screw⑥to adjust the bobbin winding amount

Note:
The proper winding amount should be around 80% of the bobbin capacity.

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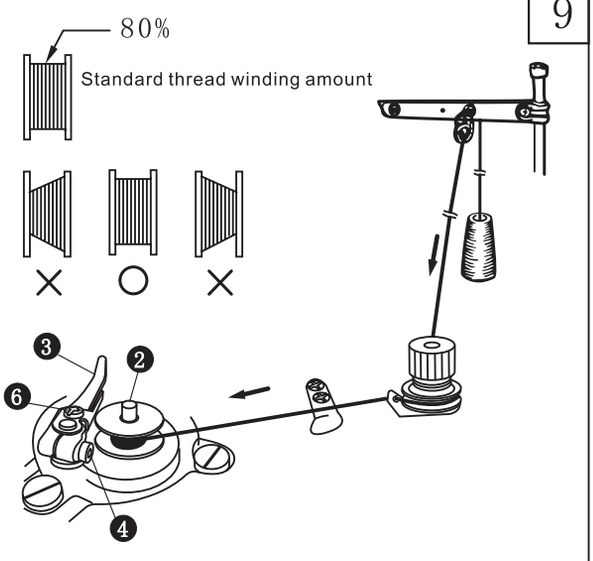

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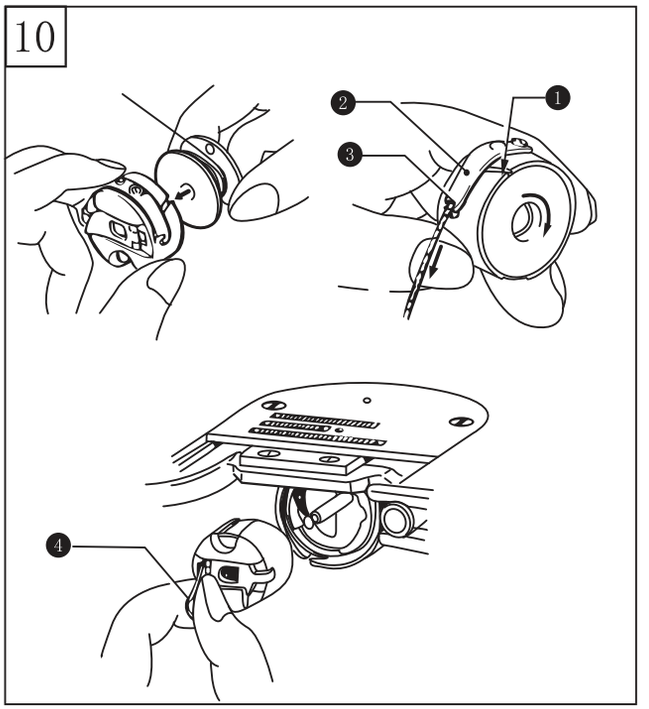

12. Threading the bobbin thread (Fig.10)

1.Turn the machine pulley to lift the needle to its highest position;
2.The bobbin thread should be right twist, place the bobbin into the bobbin case;
3.Pass the thread through the slot① and spring plate②, and finally pull it out of the notch③;
4.Check that the bobbin should turn clockwise if the thread is pulled;
5.Hold the latch④, and place the bobbin case in the hook.

13. Threading the needle thread (Fig.11)

Raise the thread take–up lever to its highest position. This will make threading easier and will prevent the thread from coming out at the sewing start.

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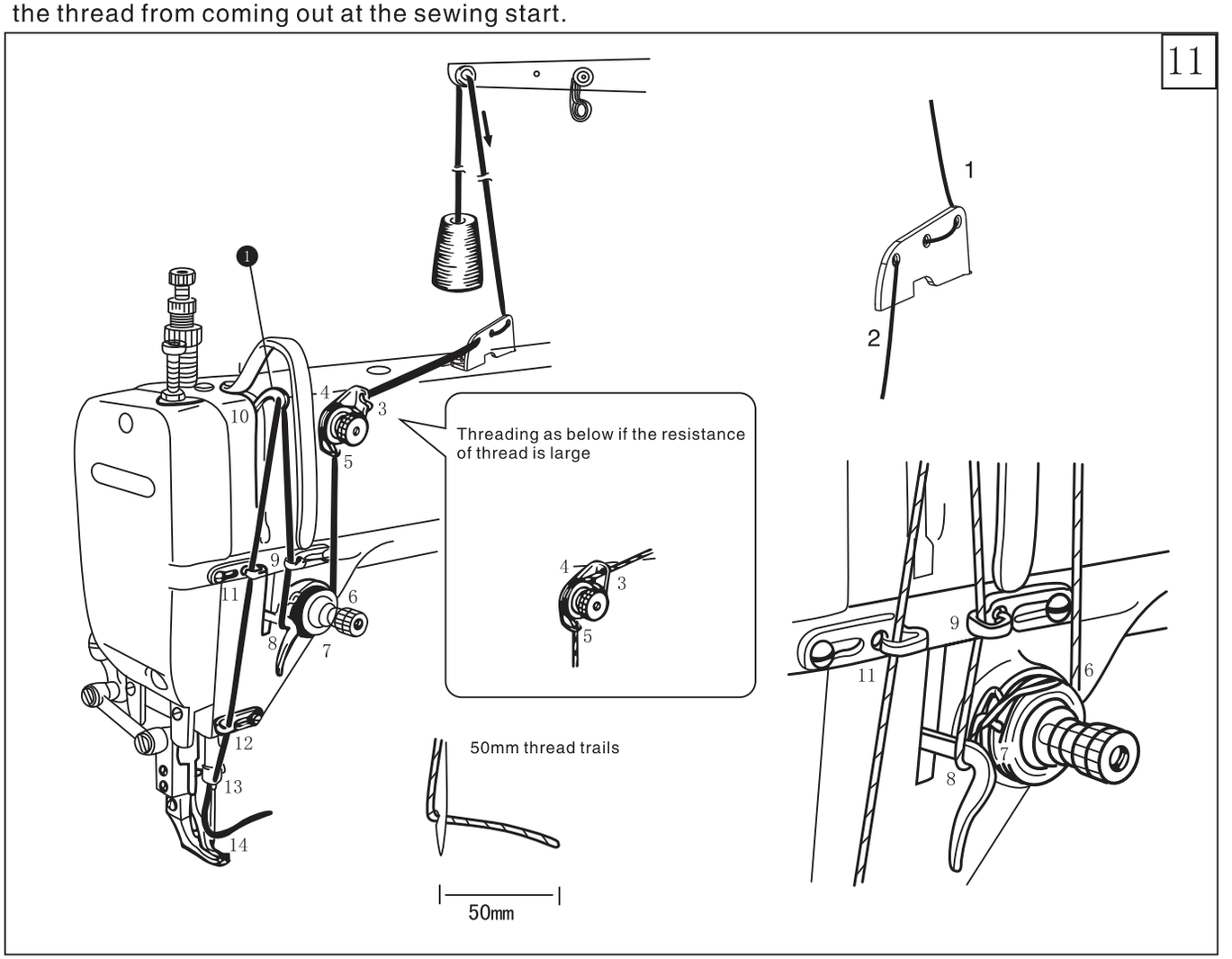

14. Adjusting the thread tension (Fig.12)

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Normal Seam

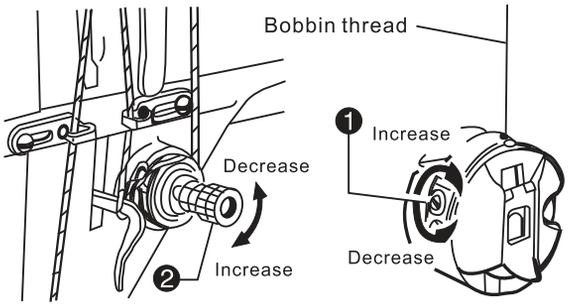
Needle thread
Bobbin thread

● Stitch seam when needle thread tension is too weak

● Increase the needle thread tension
● Decrease the bobbin thread tension

● Stitch seam when needle thread tension is too strong

● Decrease the needle thread tension
● Increase the bobbin thread tension



<Bobbin thread tension>
Adjust by turning the screw①until the bobbin case drops gently by its own weight while the thread end coming out of the bobbin case is held.
<Needle thread tension>
After adjust the bobbin thread tension, adjust the needle thread tension so that a good, even stitch seam is obtained.
1.Lower the presser foot;
2.Adjust by turning the thread tension nut②.

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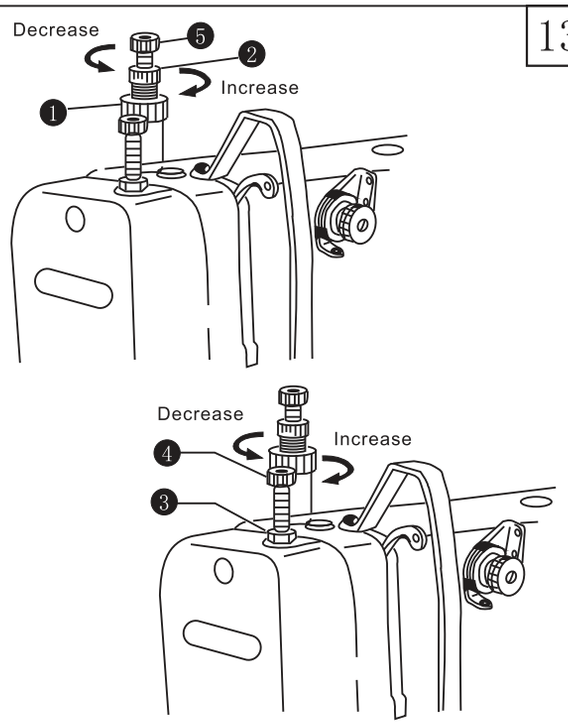

15. Adjusting the presser foot pressure(Fig.13)

<Adjusting the presser foot pressure>
1.Loosen the lock nut①;
2.Turn the adjusting screw②to adjust the pressure of presser foot, if it's not enough, please turn the screw⑤to increase the pressure.
＊The pressure should be as week as possible, but strong enough so that the material doesn't slip.
3. Tighten the nut①.
<Adjusting the walking foot presser>
1.Loosen the nut③;
2.Turn the screw④clockwise to increase the pressure, on the contrary, turn the screw counterclockwise to decrease the pressure;
3. Tighten the nut③.

16. Adjusting the trailing length after thread trimming(Fig.14)

Turn the nut①to adjust the trailing length

- At the time of thread trimming, the thread tension mechanism will release and the needle thread tension is only applied by the thread guide①;
- The standard trailing length for the needle thread is 40–70mm;
- If increase the thread guide tension, the trailing length will be short; if decrease the thread guide tension, the trailing length will be longer.

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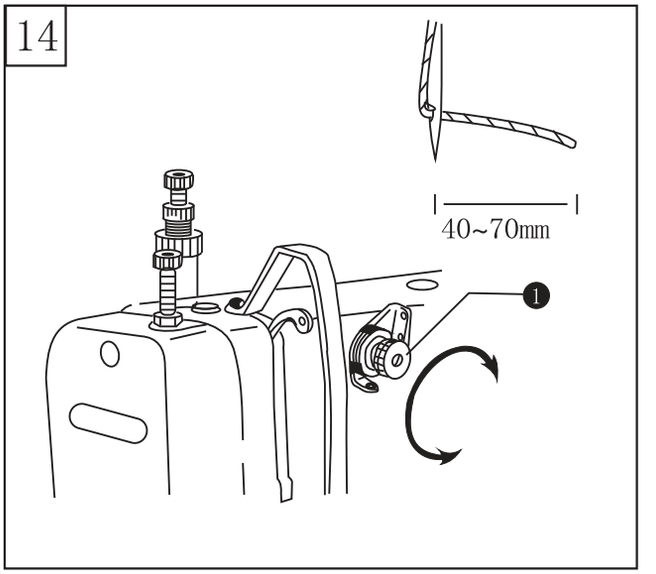

17. Adjusting the thread tension spring (Fig. 15)

★ The standard position of the thread tension spring①is 5–8mm above the upper surface of the thread guide③when the presser foot②is lowered.

1.Lower the presser foot②;
2.Loosen the screw④;
3.Turn the thread tension bracket⑤to adjust the spring position;
4.Tighten the screw④.

★ The standard tension of the spring is 0.3–0.6N.

5.Push the needle thread with your finger until it is slightly higher than the thread tension bracket ⑤and so that the upper thread is not pulled out;
6.Pull the needle thread down until the spring①is at the same height with the upper surface of thread guide③, and then measure the tension of the spring.
7.Insert a screwdriver into the slot of the thread tension stud⑥, and turn the stud to adjust the tension of the spring①.

Note:
If using a tension gauge⑦to measure the tension, take the reading from the scale on the side of the red line.

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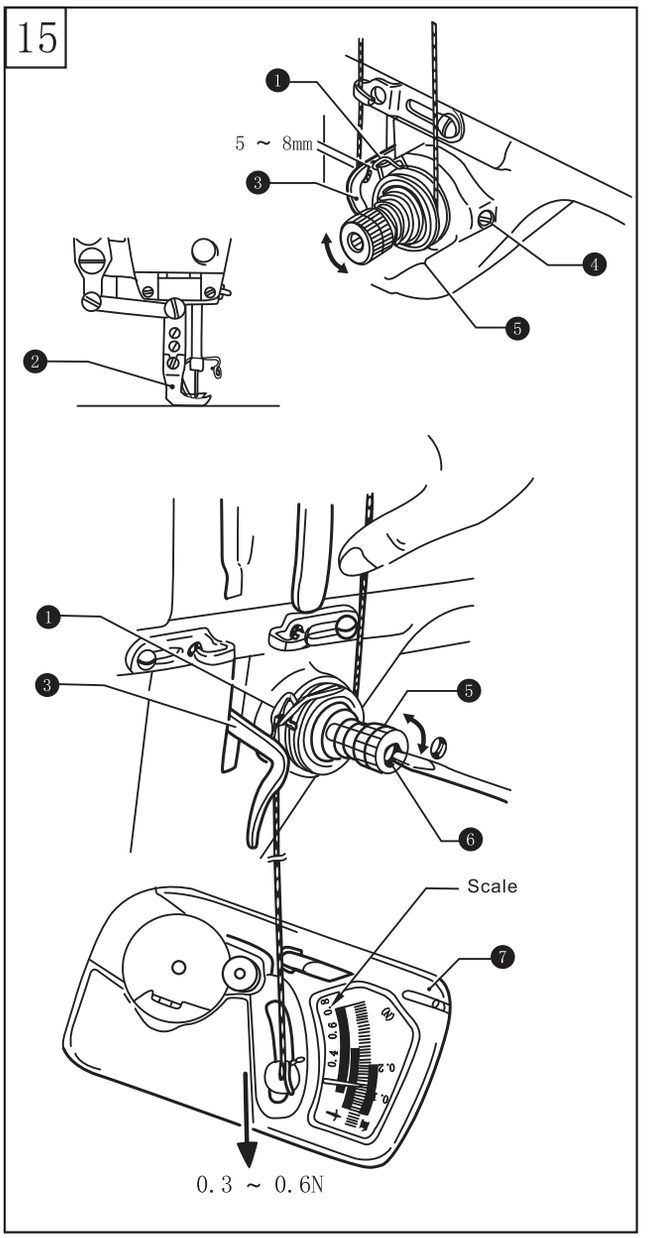

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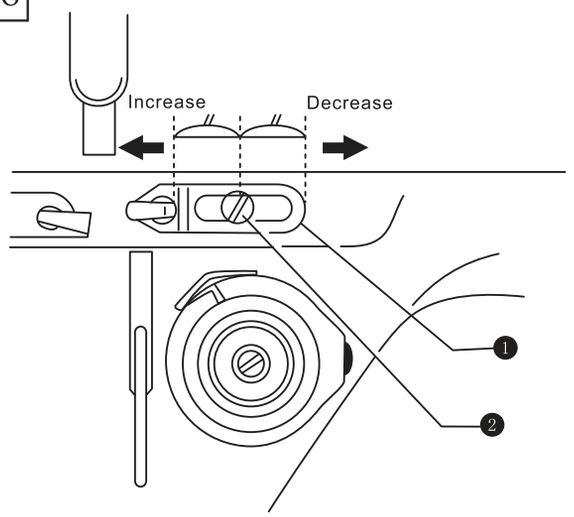

18. Adjusting the upper thread guide (Fig. 16)

The standard position of upper thread guide①is where the screw②is in the center of the adjustable range of upper thread guide.
To adjust the position, loosen the screw②and move the thread guide.
If stitch the heavy materials, move the thread guide leftward. (To increase the thread take–up tension)
If stitch the light materials, move the thread guide rightward. (To decrease the thread take–up tension)

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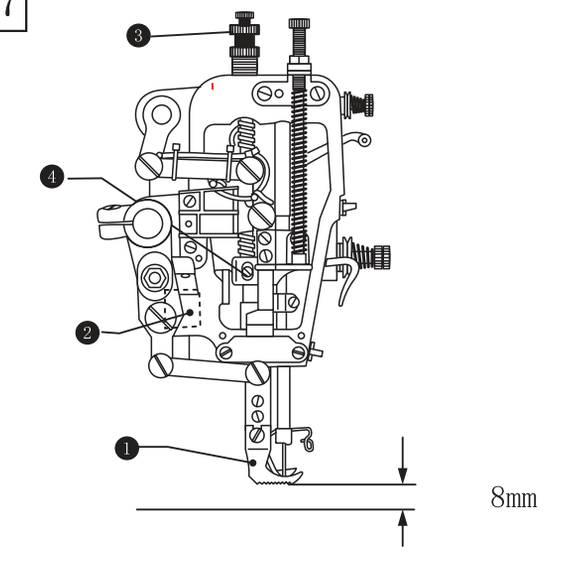

19. Adjusting the presser foot height (Fig. 17)

The standard height of presser foot①is 8mm when it is lifted by hand.
1.Loosen the screw③to lift the presser bar
2.Put a measurement gauge with 8mm height under the presser foot;
3.Loosen the screw④and adjust the height of presser foot;
4.Tighten the screw④.

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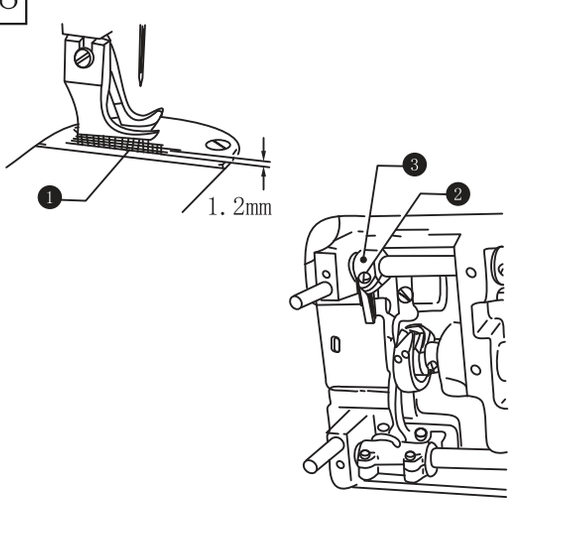

20. Adjusting the feed dog height (Fig. 18)

1.Set the stitch length maximum, when the feed dog①is at its highest position above the needle plate, the standard height is 1.2mm
2.Loosen the screw②and turn the feed lifting arm③to adjust the height of feed dog.

21. Adjusting the feed dog angle (Fig. 19)

The standard angle of the feed dog is: when the feed dog is at its highest position above the needle plate, the Mark on the feed bracket shaft is on the horizontal position.
1.Turn the machine pulley to lift the feed dog to its highest position;
2.Loosen the screw⑦;
3.Turn the feed bracket shaft in the direction of the arrow within a range of 90 with respect to the standard angle position.
*In order to prevent puckering, lower the front of the feed dog (Fig. A)
*In order to keep the materials straight, raise the front of the feed dog (Fig. B)
4.Securely tighten the set screw⑦.
It?s necessary to adjust the feed dog height again after this adjustment.

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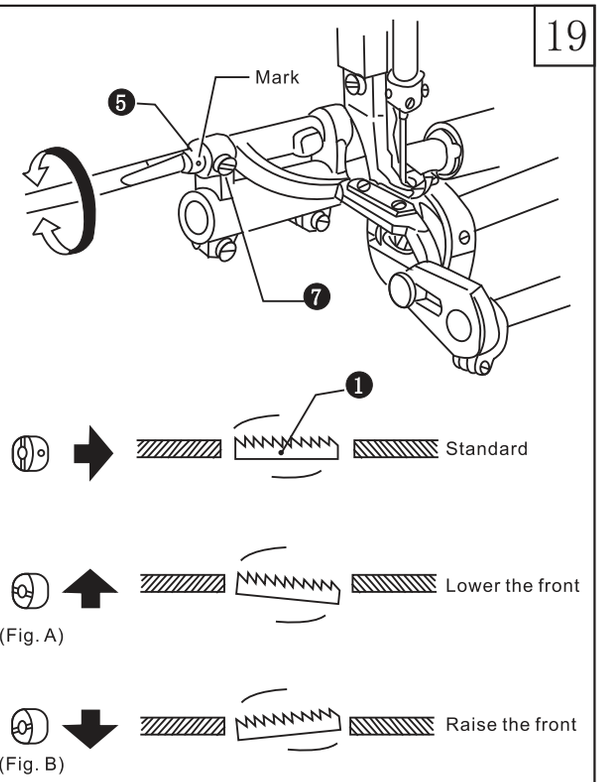

22. Adjusting the tension release (Fig. 20)

The opening time of the thread tension discs can be adjusted.
Remove the rubber cap on the rear of arm, and turn the screw①, then the thread release cam ②can be moved left or right.
Move the cam rightward, the release time will be slow
Move the cam leftward, the release time will be quick.

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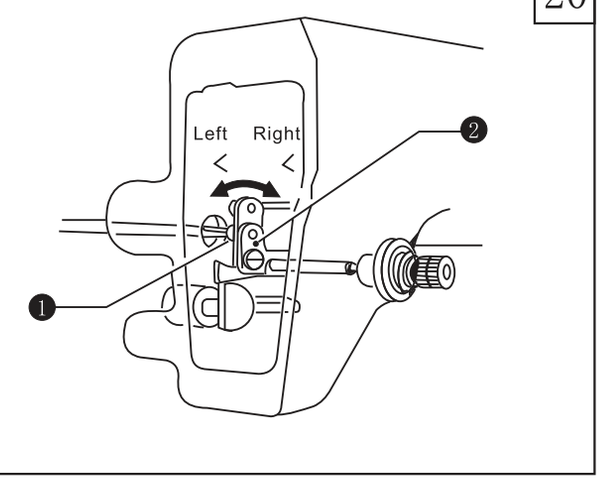

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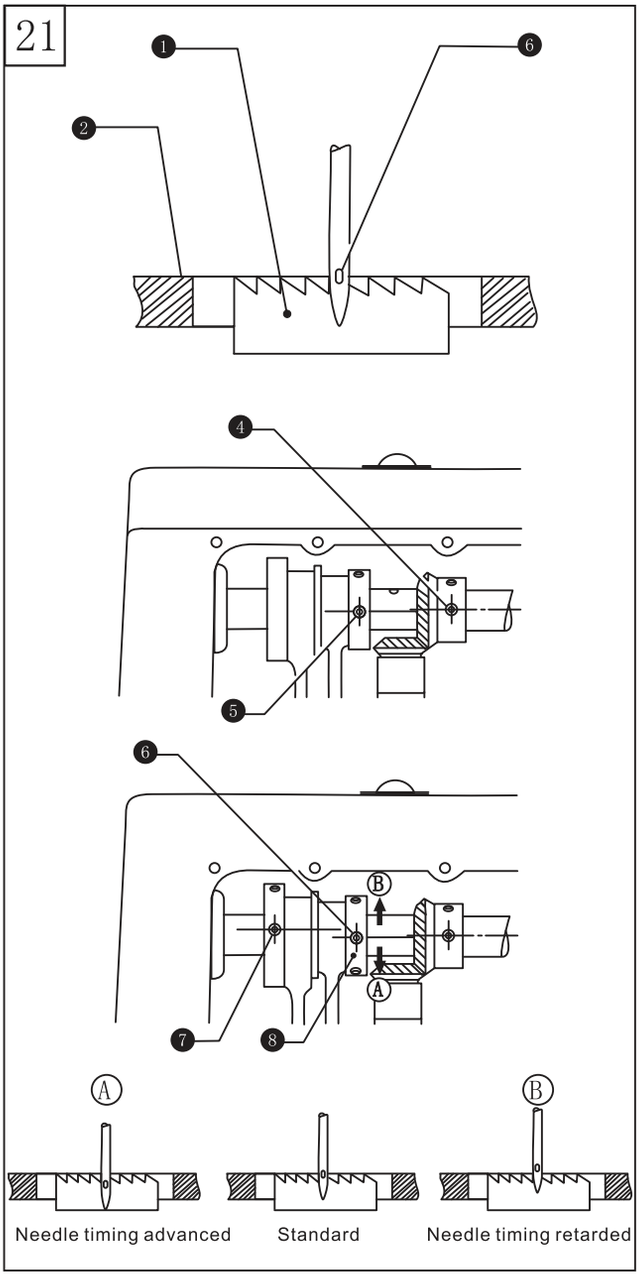

23. Adjusting the timing of needle and feed mechanism (Fig. 21)

The standard timing is when the feed dog is lowered from its highest position until it is flush with the top of the needle plate②, and the needle eye③ is also aligned horizontally with the surface.
Adjust by changing the phases of feed cam and eccentric wheel UD

1.Remove the rear cover
2.Turn the machine pulley in reverse direction, set the second screw④on the gear of upper shaft as reference mark, make the third screw⑤ of eccentric wheel UD slightly lower than the reference mark screw④;
3.Continue to turn the machine pulley, set the second screw⑥of eccentric wheel UD as reference mark, make the third screw⑦of feed cam slightly higher than the reference mark screw⑥.
4.If need a non–timing position, loosen the three screws of eccentric wheel UD, adjust the eccentric cam⑧ in the direction of arrow (A) or (B)
To increase the tension of thread, turn the eccentric cam⑧ to direction (A)
To avoid the needle bent, turn the eccentric cam ⑧to direction (B)
5.After adjustment, tighten all of the screws.

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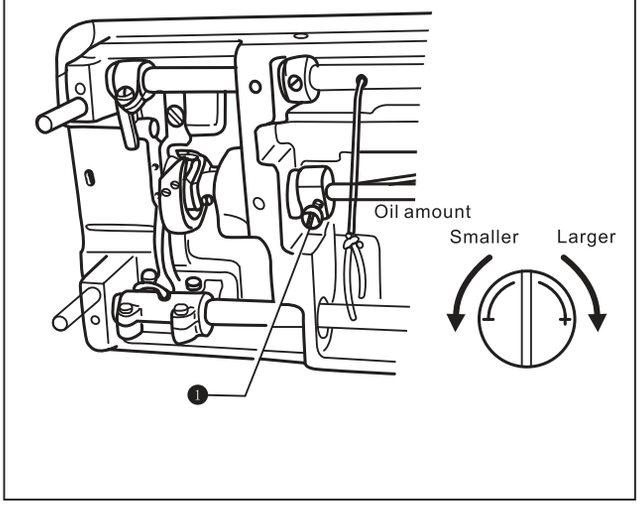

24 Adjusting the rotary hook lubrication amount (Fig. 22)

Tilt back the machine head, and turn the oil adjustment screw①to adjust the hook oiling amount.

25 Adjusting the height of needle bar and the timing with hook (Fig. 23)

When the needle bar①is at its lowest position, the top reference line (A) on the needle bar should be aligned with the bottom edge of the needle bar bush②.
1.Turn the machine pulley to lower the needle bar to its lowest position;
2.Take out the rubber cap③;
3.Loosen the screw④, and move the needle bar ①to proper position;
4.Tighten the screw④;
5.Close the rubber cap③.

Lift the needle bar①from the lowest position, when the second reference line (B) on the needle bar is aligned with the bottom edge of the needle bar bush②, the tip⑤of the hook should be aimed at the center of needle⑥.
1.Turn the machine pulley to raise the needle bar ①from its lowest position until the reference line (B) is aligned with the bottom edge of the needle bar bush②
*When the needle bar moves up 2mm, the clearance between the upper of needle hole and the hook tip should be 1.3–1.8mm
2.Loosen the screw⑦, and make the hook tip aimed at the center of needle⑥, the clearance between the hook tip and needle should be 0.05mm
3.Tighten the screw⑦.

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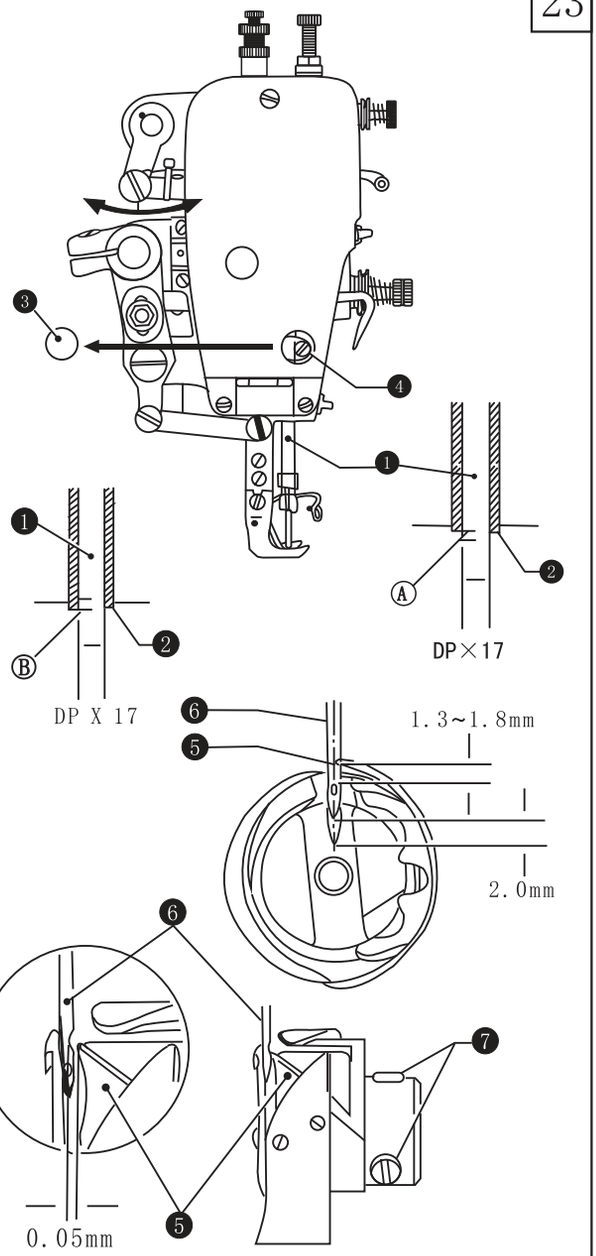

26 Adjusting the oil pump (Fig. 24)

If the oil is not circled observed from the oil gauge window at a lower sewing speed, turn the oil adjustment plate①to cover the oil hole②.

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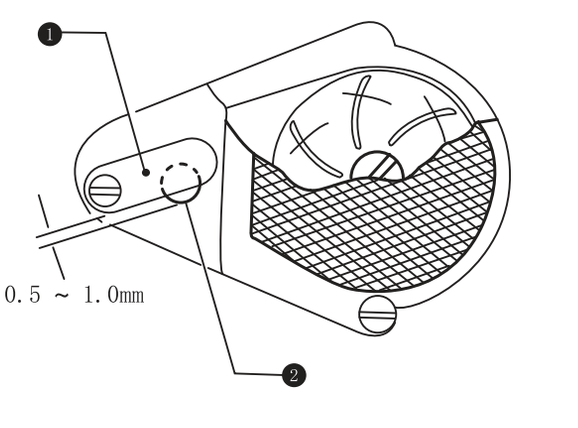
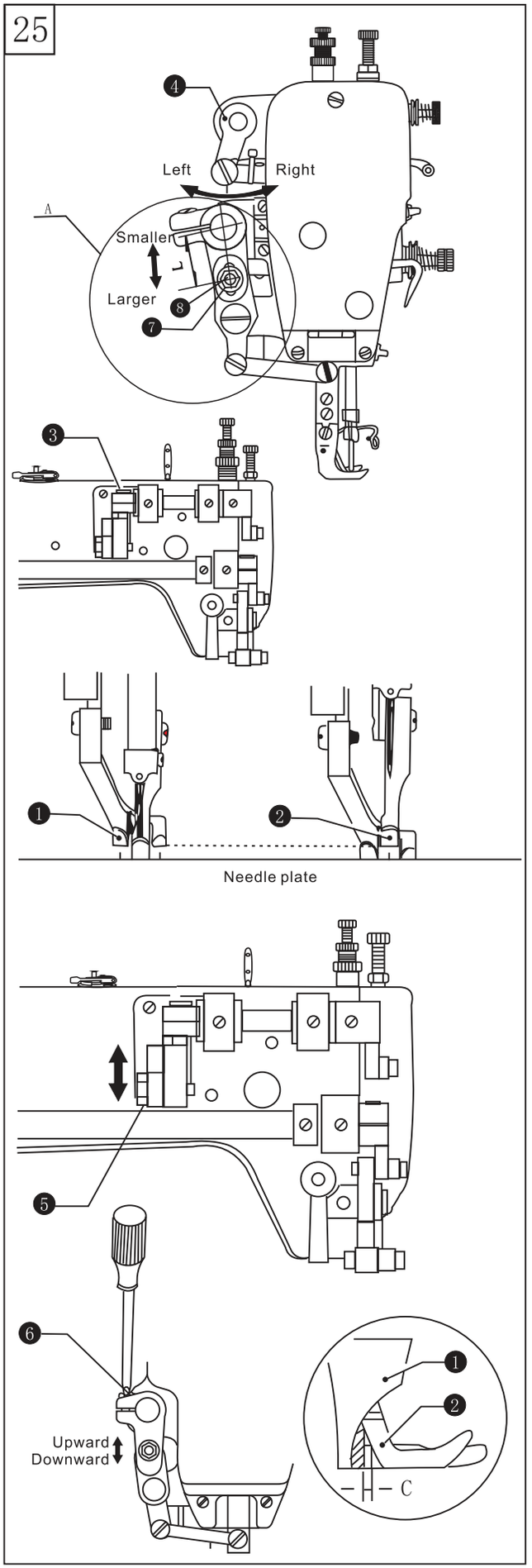




27. Adjusting the lifting amount of presser feet (Fig. 25)

1.Vertical movement of presser foot and walking foot
*The walking foot①and presser foot②move vertically one after another
*Usually the stroke of walking foot and presser foot is same or the stroke of presser foot is slightly lower.
Place the thread take-up lever at the lowest position, and lower the presser bar lifter, loosen the screw③and move the upper feed lifting cam④.
Move it rightward to make the stroke of two feet be equal
Move it leftward to make the stroke of presser foot be smaller.

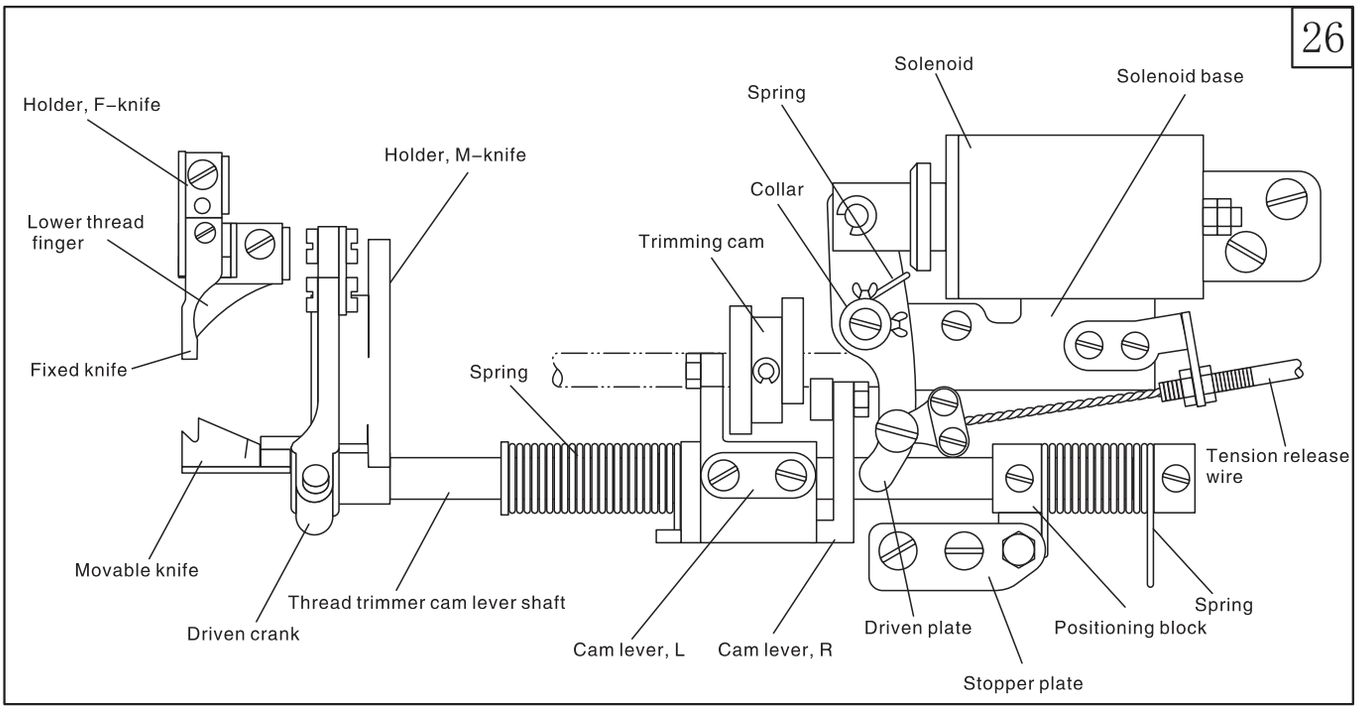
2.Adjusting the lifting amount of presser feet
Adjust the lifting amount of two feet to match the materials to be sewn.
Loosen the screw⑤, and move the screw upward to increase the lifting amount or move the screw downward to decrease the lifting amount.

3.Adjusting the forward/backward clearance of the two feet
*To keep the front groove of walking foot not strike the rear of the presser foot, the clearance of C must be kept about 3mm.
Loosen the screw of feed arm R, and then turn the feed rock shaft⑥to adjust.

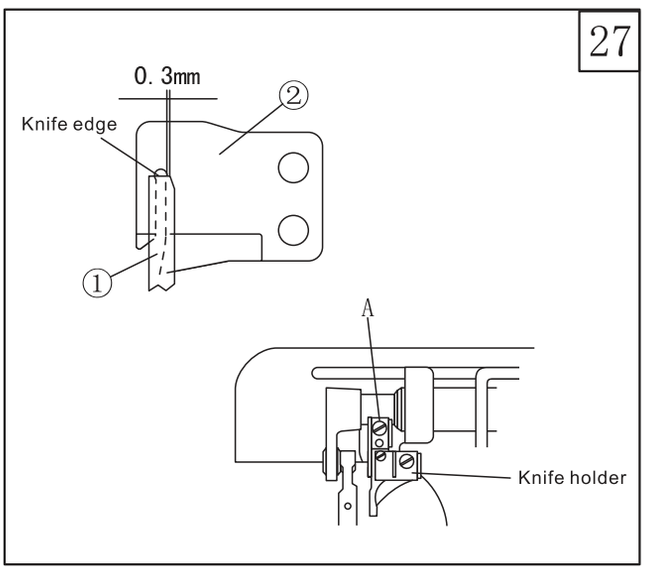
4.Adjusting the feed amount of walking foot(Fig. A)
*The standard ration of feed amount between feed dog and walking foot is 1:1
The feed amount of walking foot can be adjusted to suit for the materials to be sewn.
Loosen the nut⑦, and move the slide block⑧
Upward: decrease the distance L to make the feed amount be smaller
Downward: increase the distance L to make the feed amount be larger

28. Adjusting the trimming mechanism

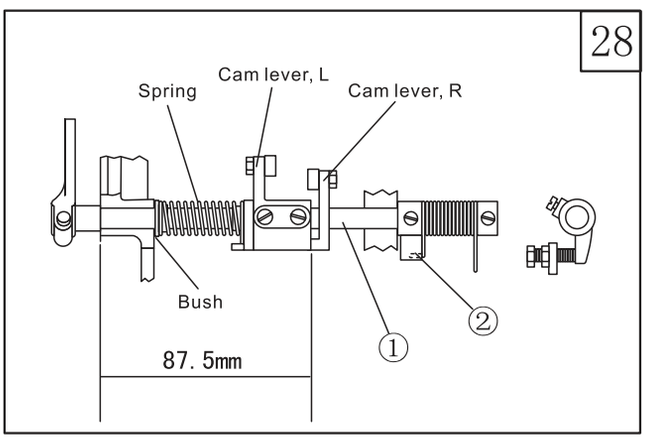
1.Trimming mechanism (Fig. 26)

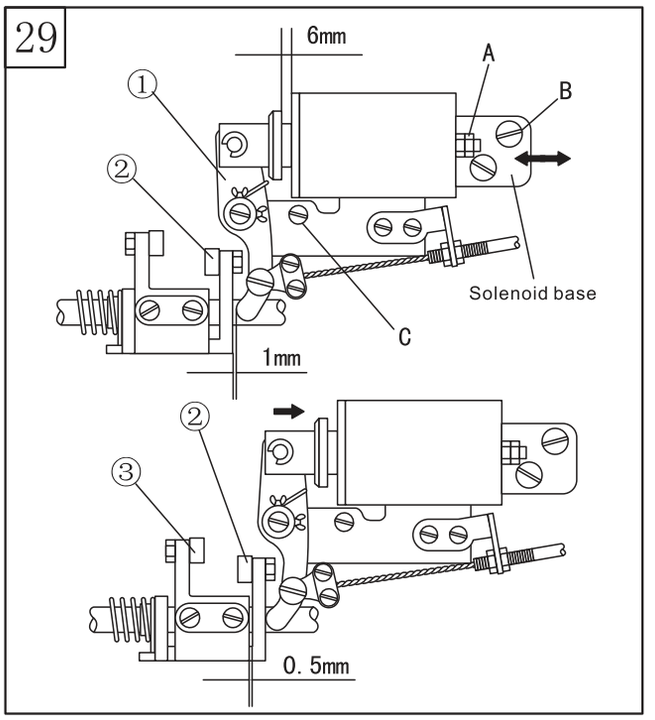


2.The relation between fixed knife and movable knife (Fig. 27)
(1)The clearance between fixed knife①and movable knife②should be 0.3mm
(2)Adjust the position illustrated by the Fig. 30
(3)Move the bobbin case opener and adjust the holder of fixed knife.

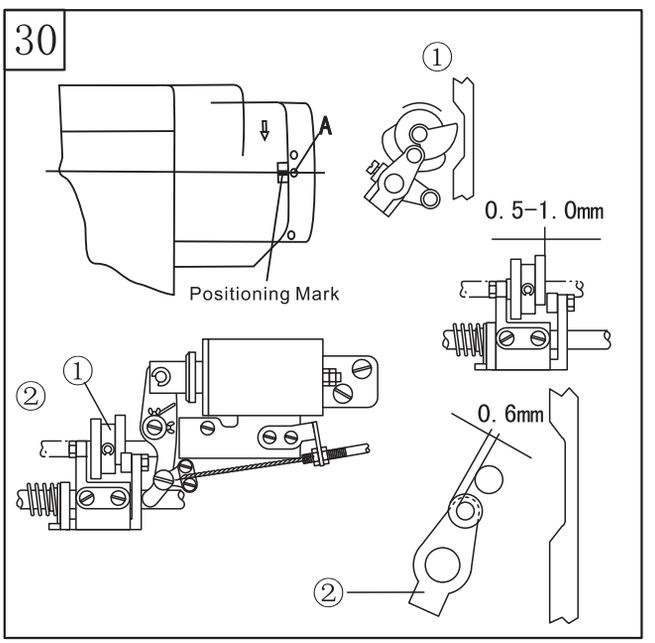


3.Thread trimmer cam lever shaft (Fig .28)
(1)Install the shaft①on the machine bed first;
(2)Install the cam lever L on the shaft①as illustrated;
(3)Slightly turn the shaft①, and install the positioning block②as illustrated.

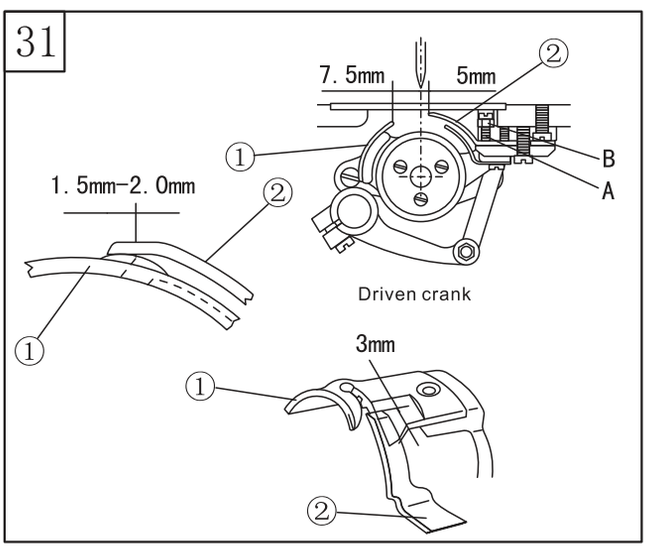




4.Installing the trimming solenoid (Fig.29)
(1)The stoke of solenoid
a. The standard stroke is 6.0mm
b. Turn the nut (A) to adjust the stroke
(2)Installing the solenoid
a.Fixed the solenoid by the screws B and C;
b. Be sure to keep the clearance between the driven plate①and cam lever R②1mm;
c. When the solenoid is active, there should be a 0.5mm clearance between the cam lever L③ and cam lever R②. If need to adjust, please move the solenoid base shown by the arrow.



5.Installing the trimming cam (Fig. 30)
(1)Align the second mark A on the machine pulley with the Positioning Mark on the arm;
(2)Set the solenoid active and turn the trimming cam①until the cam is touched with the roller, then fix the cam;
(3)Set the solenoid inactive and make the cam lever②restore to the original position, there should be a 0.5–1.0mm clearance between cam and roller.



6.Adjusting the knives (Fig. 31)
(1)The relation between fixed knife and movable knife
The clearance between movable knife①and needle center is 7.5mm, and the clearance between fixed knife②and needle center is 5mm.
(2)Set the solenoid active, the movable knife① will turn rightward driven by the trimming cam. When the movable knife①moves to its left furthest position, the clearance between two knives①and②should be 1.5–2.0mm
(3)Adjusting the trimming solenoid
A.If the thread trimming not smoothly, especially the thick thread used, just need to increase the trimming pressure;
B.Adjusting the trimming pressure: loosen the nut B, adjust the screw A to get the reasonable pressure.

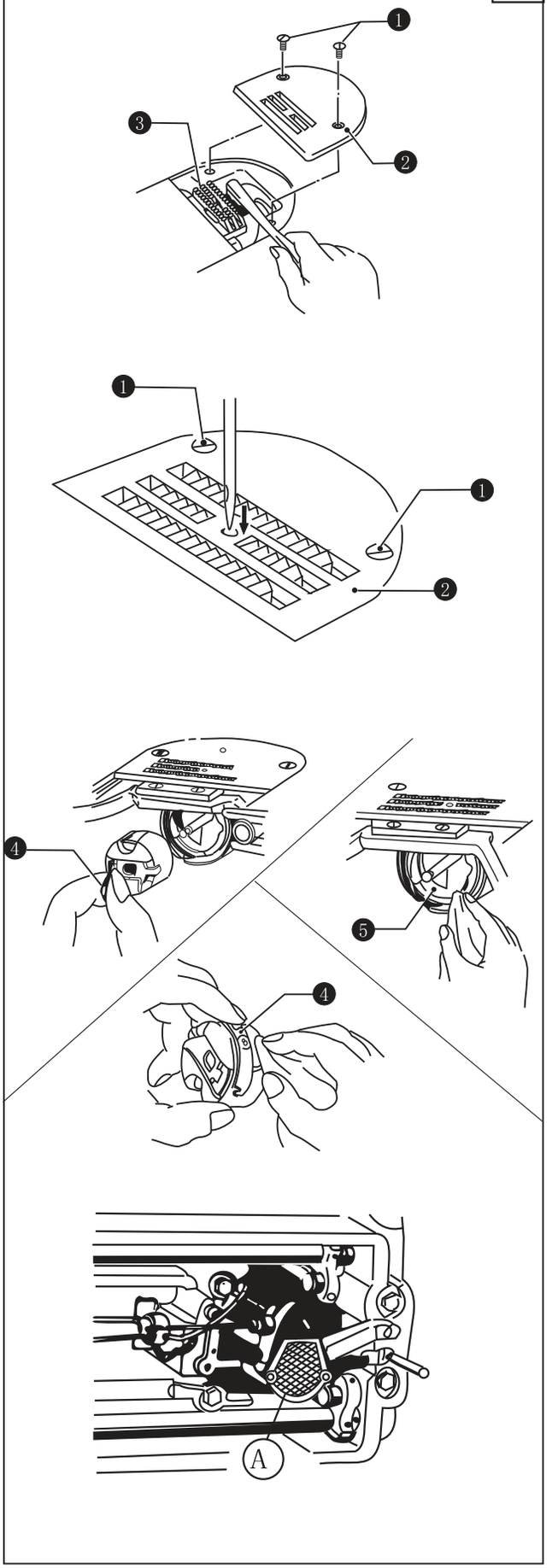
29.Clean (Fig.32)

1.Raise the presser foot;
2.Remove the two screws①and needle plate②;
3.Clean the feed dog with a soft brush;
4.Install the needle plate② by two screws①.

5.Turn the machine pulley slowly and check if the needle drops into the hole center of needle plate
★If not
●Check if the needle is bent
●Loosen the screw①, and reinstall the needle plate②
6.Turn the machine pulley and lift the needle above the needle plate, check if the needle tip is blunt, if yes, change a new one.
7.Tilt back the machine head
8.Remove the bobbin case④
9.Clean the hook with a soft cloth and check if the hook is worn out
10.Take out the bobbin from the bobbin case, and clean the bobbin case with a soft cloth
11.Insert the bobbin into the bobbin case and place the bobbin case back into the machine

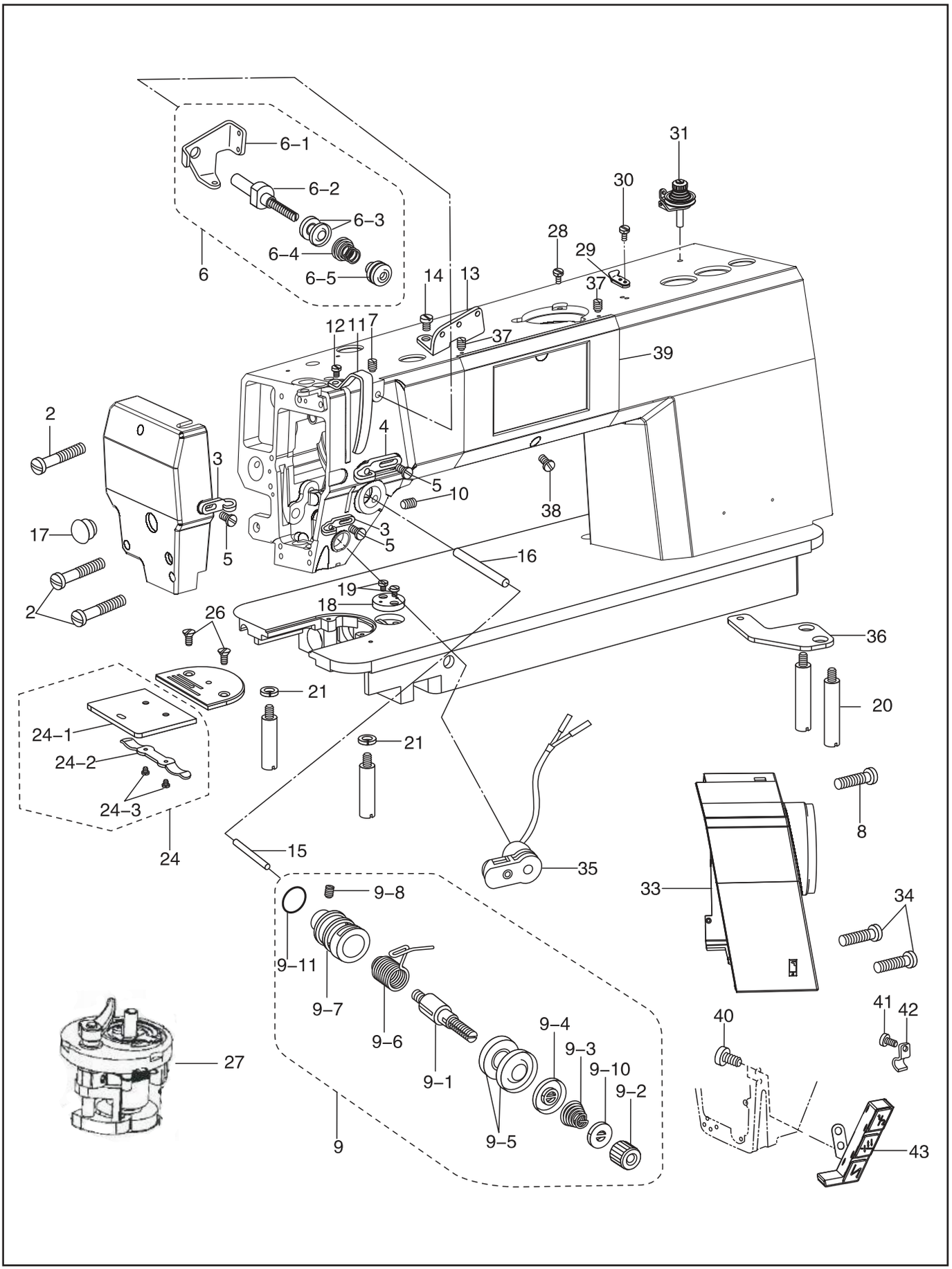
12.Clean the dust on the filter (A) of oil pump.

32



Parts Catalogue

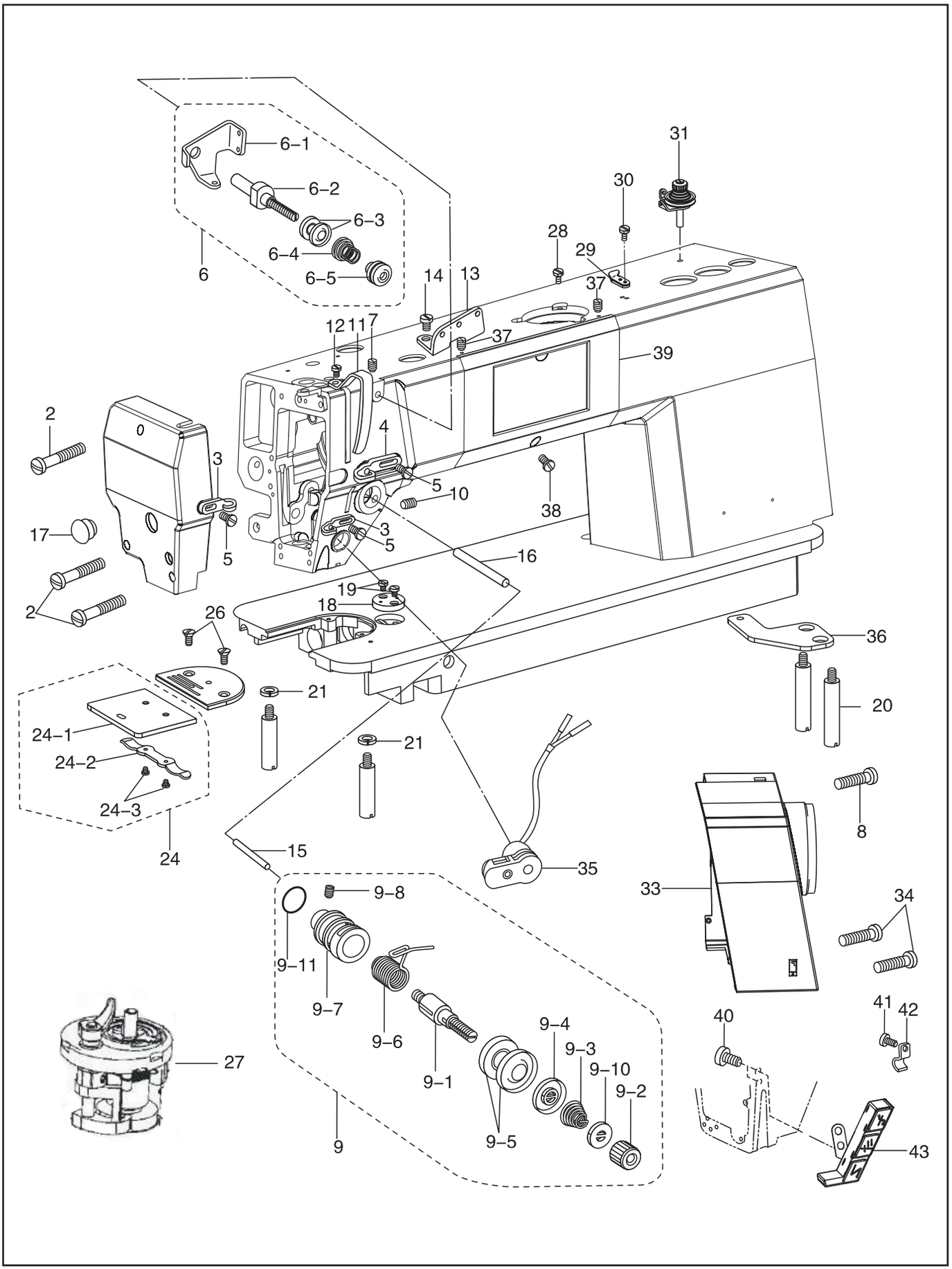
1. Casting mechanism



1. Casting mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	652WF1–003	Face plate	1	1	
2	7WF4–004	Screw	3	3	
3	22T1–003C5	Thread guide	2	2	
4	22T1–014	Thread guide	1	1	
5	22T1–003C6	Screw	3	3	
6	469WF1–003	Thread guide assy.	1	–	
	447WF1–007	Thread guide assy.	–	1	
6–1	469WF1–003B	Thread guide	1	–	
	36T2–006D1	Thread guide	–	1	
6–2	469WF1–003A	Pre-tension stud	1	–	
	36T2–006D2	Pre-tension stud	–	1	
6–3	469WF1–003C	Tension disc	2	–	
	22T1–009E3	Tension disc	–	2	
6–4	36T2–006D3	Tension spring	1	1	
6–5	447WF1–007A	Adjusting nut	1	1	
7	20T1–004	Set screw	1	1	
8		Screw	1	1	GB/T70.1 M5x25
9	447WF1–006	Thread tension bracket assy.	1	1	
9–1	22T1–012F1	Tension stud	1	1	
9–2	447WF1–006A	Tension nut	1	1	
9–3	33T4–008C1	Tension spring	1	1	
9–4	22T1–012F4	Disc, presser	1	1	
9–5	22T1–012F5	Disc, tension	2	2	
9–6	22T1–012F6	Thread take-up spring	1	1	
9–7	22T1–012F7	Thread tension bracket	1	1	
9–8	22T1–012F8	Set screw	1	1	
9–10	447WF1–006B	Stopper	1	1	
9–11	22T1–012F11	O ring	1	1	
10	22T1–013	Set screw	1	1	
11	1KT1–003	Cover	1	1	
12	22T2–004	Screw	1	1	
13	36T2–004	Thread retainer	1	1	
14	36T2–005	Screw	1	1	
15	692WF1–002	Tension release pin	1	1	
16	2KT4–003	Tension release stud	1	1	
17	7WF4–030	Rubber plug	1	1	
18	7WF4–005	Holder bracket	1	1	
19	1WF3–025	Screw	2	2	
20	68WF1–015	Bed leg	4	4	
21		Washer, spring	2	2	GB93 6
22	675WF1–001	Arm	1	–	
	692WF1–001	Arm	–	1	
23	258WF1–002	Bed	1	–	
	241WF1–001	Bed	–	1	
24		Slide plate assy.	1	1	
24–1	68WF1–023	Slide plate	1	–	
	7WF4–006	Slide plate	–	1	
24–2	20T1–013F2	Spring plate	1	1	
24–3	20T1–013F3	Screw	1	1	

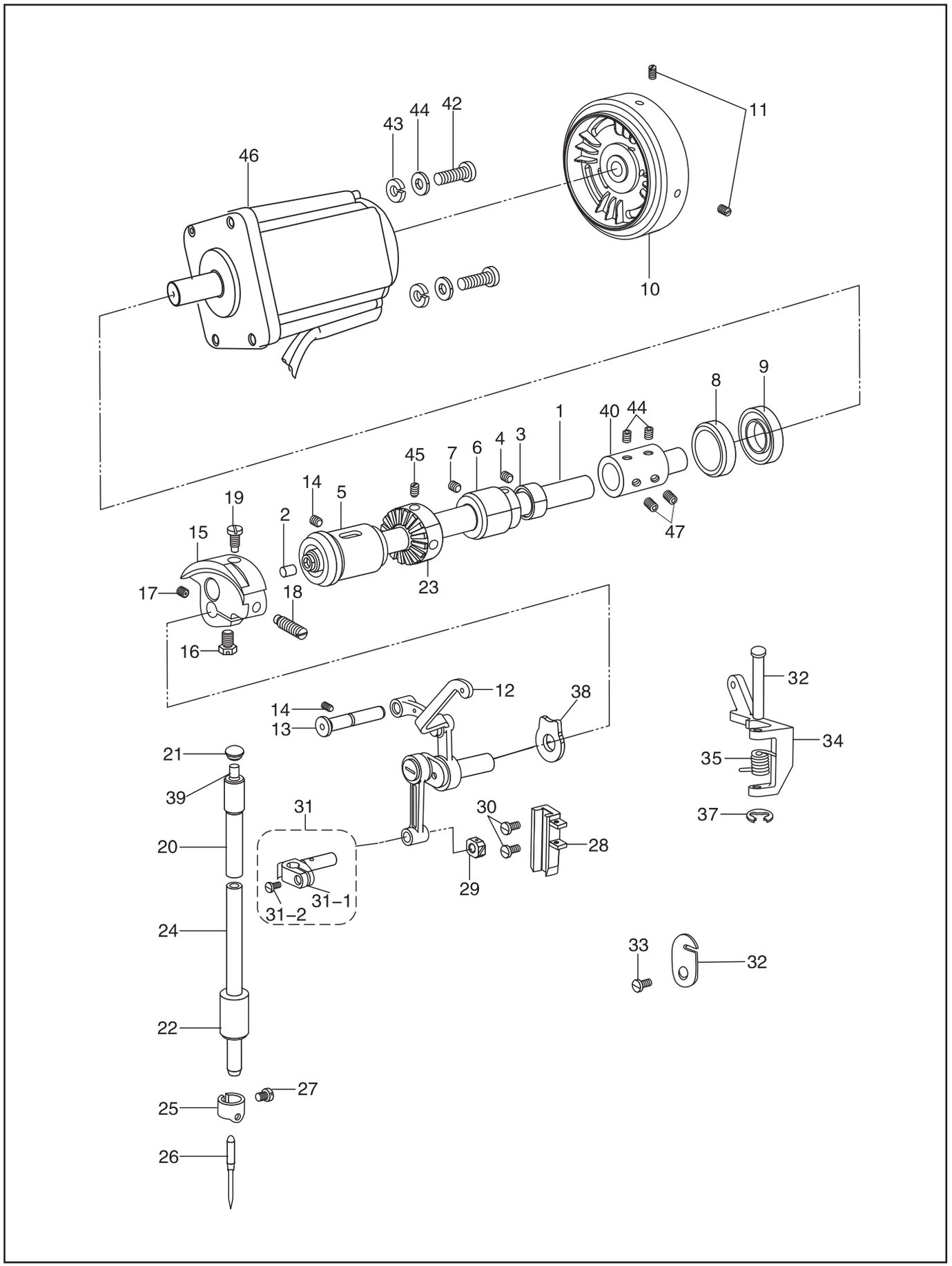
1. Casting mechanism



1. Casting mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
25	233WF1-009	Needle plate	1	1	
26	22T1-020	Screw	2	2	
27	447WF1-004	Bobbin winder	1	1	
28	92WF2-027	Screw	3	3	
29	92WF2-036	Cutter	1	1	
30	36WF2-031	Screw	2	2	
31	474WF1-011	Bobbin thread tension	1	1	
32	22T1-003C3	Rubber plug	1	1	
33	675WF1-002	Control box	1	1	
34		Screw	3	3	GB/T70.1 M5x55
35	356WF1-002	Thread nipper solenoid	1	1	
36	692WF3-001	Bracket	1	1	
37	123WF3-094	Screw	2	2	M4x6
38		Screw	1	1	GB/T65 M4x10
39	675WF1-002C	Control screen	1	1	
40	2KT5-005	Screw	2	2	
41	2KT6-017	Screw	2	2	
42	2KT5-040	Holder	4	4	
43	652WF1-002	Switch and light assy.	1	1	

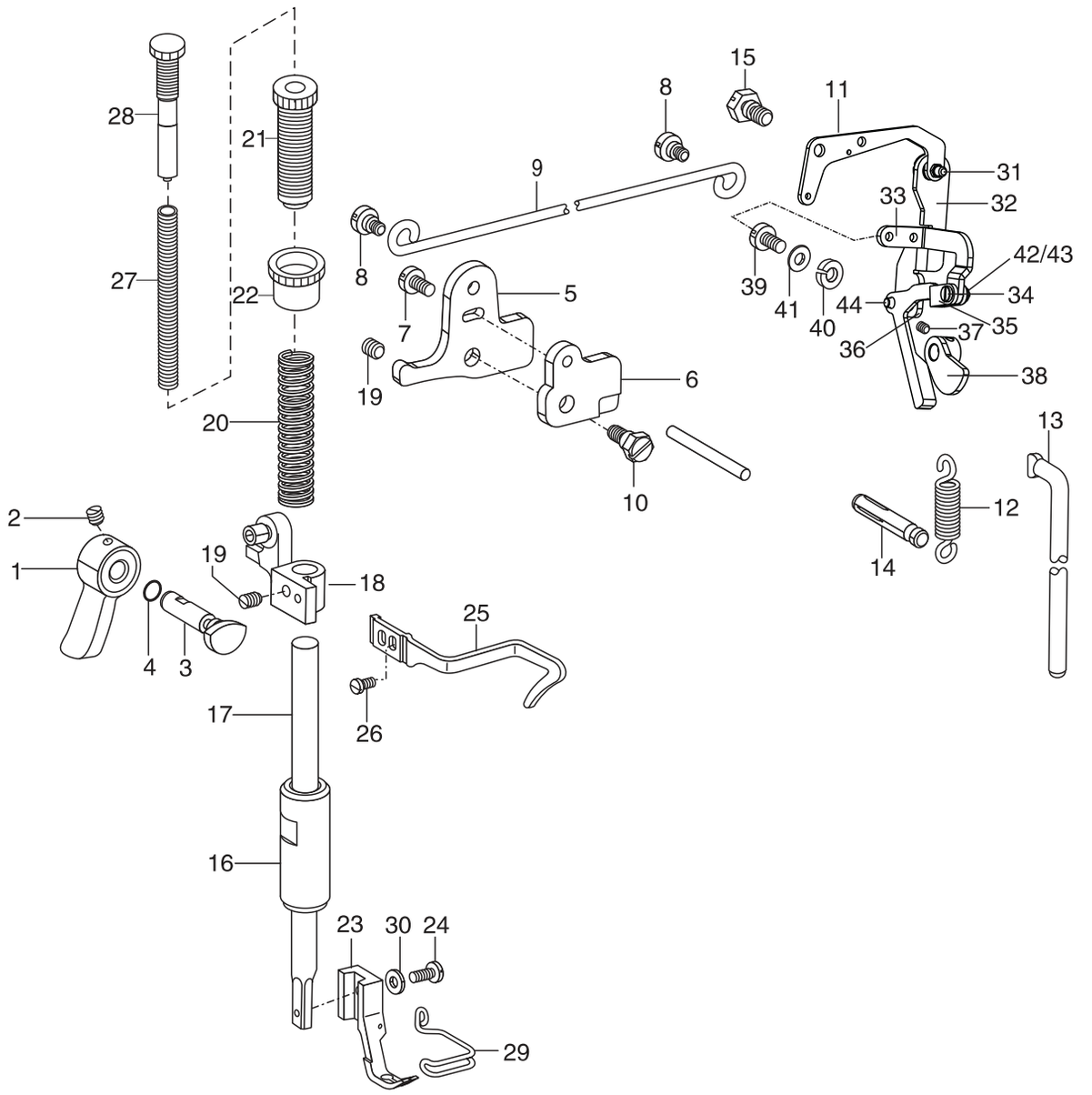
2. Needle bar and thread take-up mechanism



2. Needle bar and thread take-up mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	258WF2-001	Upper shaft	1	–	
	271WF2-001	Upper shaft	–	1	
2	22T3-001A2	Rubber cap	1	1	
3	22T3-002B1	Collar	1	1	
4	22T3-002B2	Screw	2	2	
5	241WF2-002	Bush, L	1	1	
6	4WF1-002	Bush, M	1	1	
7	J0.0.40	Set screw	1	1	
8	258WF2-005	Bush, R	1	1	Φ20xΦ42x12
9	258WF2-004	Oil seal	1	1	
10	258WF2-006	Hand wheel	1	1	
11	258WF2-007	Screw	2	2	
12	33T1-004B	Thread take-up lever set	1	1	
13	33T1-002	Support shaft	1	1	
14	J0.0.5	Set screw	2	2	
15	4WF1-007A	Thread take-up crank	1	1	
16	92WF1-014	Screw	1	1	
17	22T2-005B3	Screw	1	1	
18	33T1-006C2	Screw	1	1	
19	20T2-007	Screw	1	1	
20	22T2-008	Bush, U	1	1	
21	22T1-011	Rubber cap	1	1	
22	2KT1-002	Bush, D	1	1	
23	258WF2-002	Friction wheel	1	1	
24	2KT1-001	Needle bar	1	1	
25	22T2-015	Thread guide	1	1	
26		Needle	1	1	DPX17 21#
27	22T2-017	Set screw	1	1	
28	2KT1-003	Guide	1	1	
29	33T1-013	Slide block	1	1	
30	22T2-019	Screw	2	2	
31	33T1-015H	Needle bar clamp assy.	1	1	
31-1	22T2-001A8	Needle bar clamp	1	1	
31-2	22T2-001A9	Set screw	1	1	
32	233WF6-016	Wire holder, U	1	1	
33	36WF2-031	Screw	1	1	SM9/64 " x40x4.5
34	474WF5-001	Releasing thread Plate	1	1	
35	2KT4-006	Spring	1	1	
36	2KT4-005	Pin	1	1	
37		Retaining ring	1	1	GB896 2
38	33T1-005	Washer	1	1	
39	22T1-010	Felt	1	1	
40	258WF2-003	Coupling shaft	1	1	
41	258WF2-010A	Screw	2	2	
42	93WF12-019	Screw	4	4	M5x20
43		Washer, spring	4	4	GB/T859 5
44		Washer	4	4	GB/T95 5
45	6K2-043	Screw	2	2	
46	633WF1-002B	Motor	1	1	
47	258WF2-010B	screw	4	4	

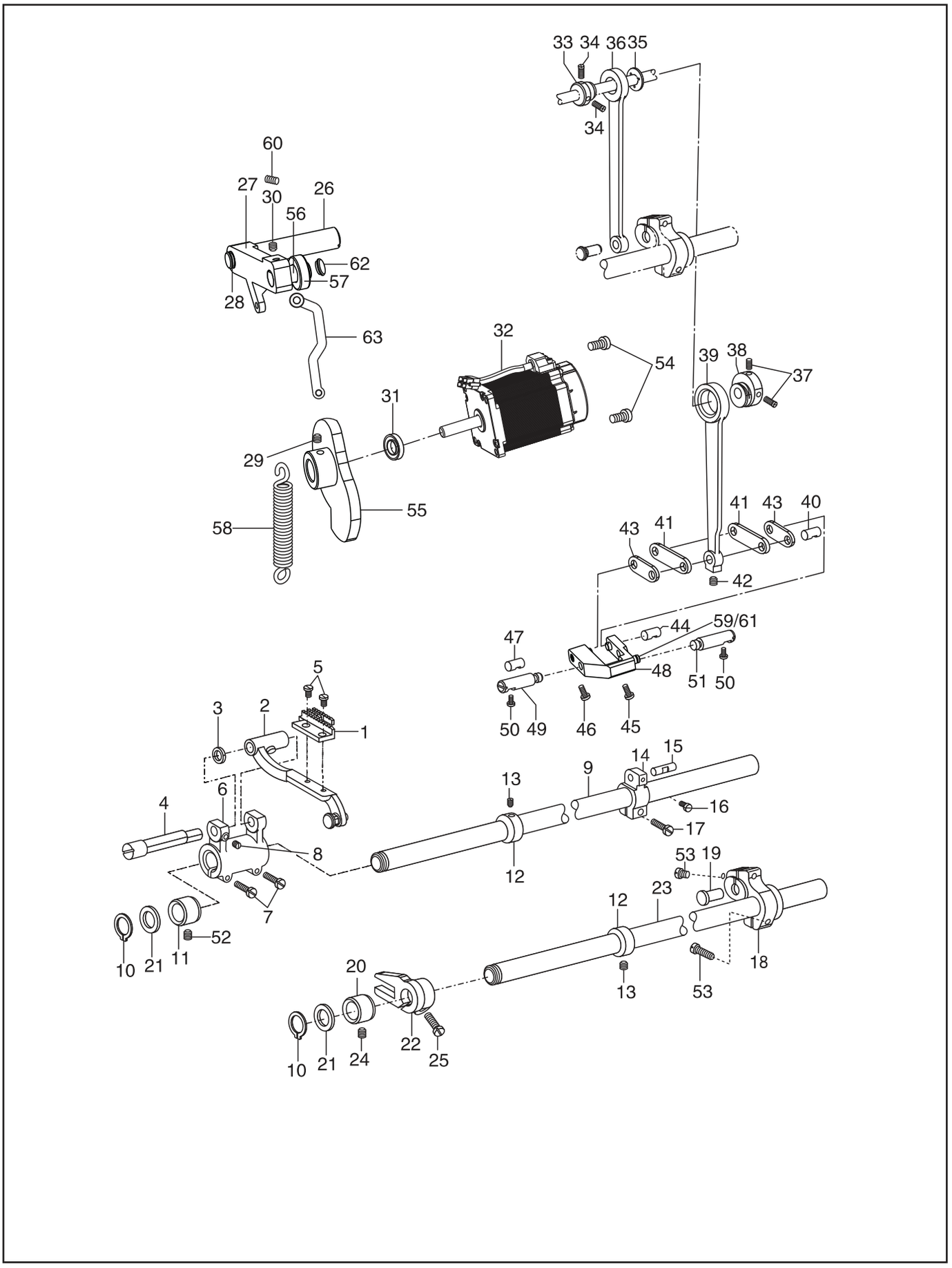
3. Presser foot mechanism



3. Presser foot mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	474WF5-003	Presser bar lifter	1	1	
2	80WF6-036	Screw	1	1	
3	474WF5-002	Lifter crank	1	1	
4		O ring	1	1	GB3452.1 4.5x1.8G
5	22T7-004B1a	Lifter lever	1	1	
6	2KT4-001	Thread releasing cam	1	1	
7	22T7-004B1c	Screw	1	1	
8	22T7-004B2	Screw	2	2	
9	675WF3-001	Knee lifter bar	1	–	
	692WF4-001	Knee lifter bar	–	1	
10	75WF5-001	Screw	1	1	
11	675WF1-002D1	Knee lifer lever (right)	1	1	
12	22T7-007c2	Spring	1	1	
13	258WF5-002	Connecting rod	1	–	
	4WF3-001	Connecting rod	–	1	
14	22T7-008	Pin	1	1	
15	405WF5-003	Screw	1	1	
16	34T3-305	Bushing	1	1	
17	241WF5-001	Presser bar	1	1	
18	7WF3-001	Guide bracket	1	1	
19	61-04-01/B308	Screw	1	1	
20	20T4-002	Spring, compression	1	1	
21	233WF6-002	Adjusting screw, presser	1	1	
22	233WF6-003	Adjusting nut, presser	1	1	
23	7WF3-003	Presser foot, inside	1	1	
24	22T7-015	Screw	1	1	
25	7WF3-002	Thread guide	1	1	
26	33T3-006	Screw	1	1	
27	233WF6-005	Adjusting spring	1	1	
28	233WF6-004	Adjusting screw	1	1	
29	7WF3-004	Finger guard	1	1	
30		Oil stopper	1	1	GB97.1 4
31	675WF1-002D2	Connecting roll stud	1	1	
		Connecting roll stud	1	1	
32	675WF1-002D3	Plate	1	1	
33	675WF1-002D4	Position bracket	1	1	
34	675WF1-002D5	Screw	1	1	
35	675WF1-002D6	Plate	1	1	
36	675WF1-002D7	Screw	1	1	
37	50WF1-041	Screw	2	2	
38	675WF1-002D8	Foot lifter cam	1	1	
39	93WF7-014	Screw	4	4	M5x14
40		Spring washer	4	4	GB93 5
41		Washer	4	4	GB95 5
42		Nut	1	1	GB/T6172.1 M5
43		Washer	1	1	GB95 6
44		nut	1	1	GB/T6172.1 M6

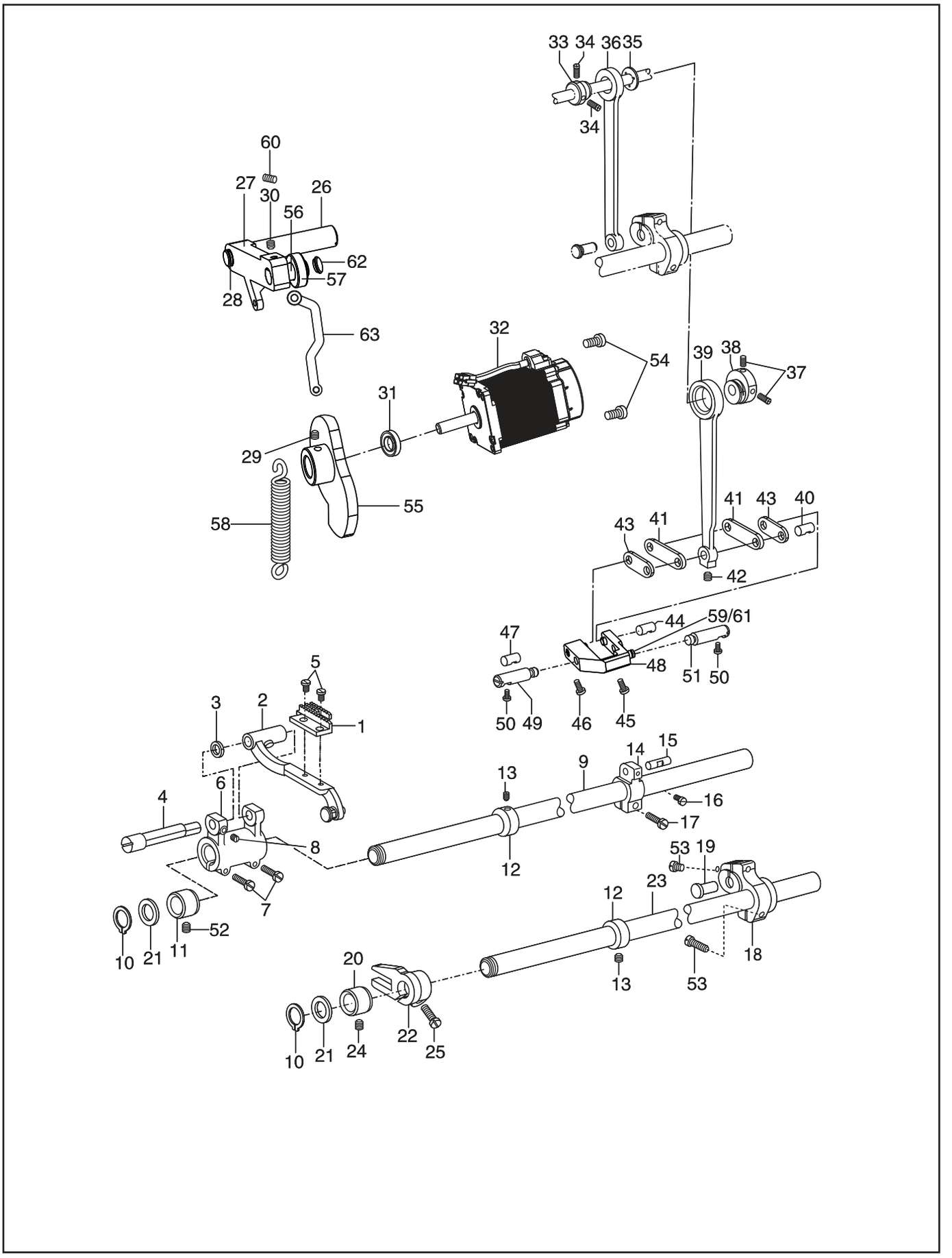
4. Feed mechanism



4. Feed mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	2KT3–001	Feed dog	1	1	
2	4WF2–014	Feed dog support Complete	1	1	
3	51T5–001A6	Washer	1	1	
4	36T4–001A2	Shaft	1	1	
5	J0.0.50	Screw	2	2	
6	4WF2–002	Feed dog support cam	1	1	
7	61–04–01/B504	Screw	2	2	
8	22T2–019	Screw	1	1	
9	68WF3–009	Feed shaft	1	–	
	81WF3–003	Feed shaft	–	1	
10		Retaining ring	2	2	GB894.1 15
11	22T6–004	Bush, L	1	1	
12	22T3–002B1	Collar	2	2	
13	22T3–002B2	Set screw	4	4	
14	4WF2–006	Feed shaft crank (R)	1	1	
15	82T2–003C1a10–2	Stud	1	1	
16	36T5–008E5	Set screw	1	1	
17	22T6–008D3	Screw	1	1	
18	68WF3–011	Feed lifting crank (rear)	1	1	
19	22T6–007	Pin	1	1	
20	22T6–012	Bush, L	1	1	
21	51T5–013	Washer	2	2	
22	36T4–018H1D1	Feed lifting fork	1	1	
23	68WF3–012	Shaft	1	–	
	81WF3–007	Shaft	–	1	
24	J0.0.5	Screw	1	1	
25	22T6–008D3	Screw	1	1	
26	675WF1–002D9	shaft	1	1	
27	675WF1–002D10	plate	1	1	
28		Ring	1	1	GB896 6
29	50WF1–041	screw	2	2	SM1/4 " x40x5
30	52WF2–007	Screw	1	1	SM3/16 " x28x8
31	633WF3–002	Oil seal	1	1	TC10x20x7
32	633WF1–002D	Motor	1	1	
33	36T3–003D1	Feed dog lift cam	1	1	
34	36T3–003D2	Screw	3	3	
35	36T3–004	Washer	1	1	
36	22T3–009D1C	Feed lifter link	1	1	
37	36T3–003D2	Screw	3	3	
38	36T5–008E1	Feed cam	1	1	
39	4WF2–009A	Feed link	1	1	
40	82T2–003C1a10–1	Long pin	1	1	
41	36T5–008E4H02	Link (long)	2	2	
42	36T5–008E5	Screw	1	1	
43	36T5–008E4H01	Link (short)	2	2	
44	675WF1–002D16	Pin A	1	1	
45	16KT1–009	Screw	1	1	
46	16KT1–009	Screw	2	2	
47	36T5–008E6	Pin B	1	1	

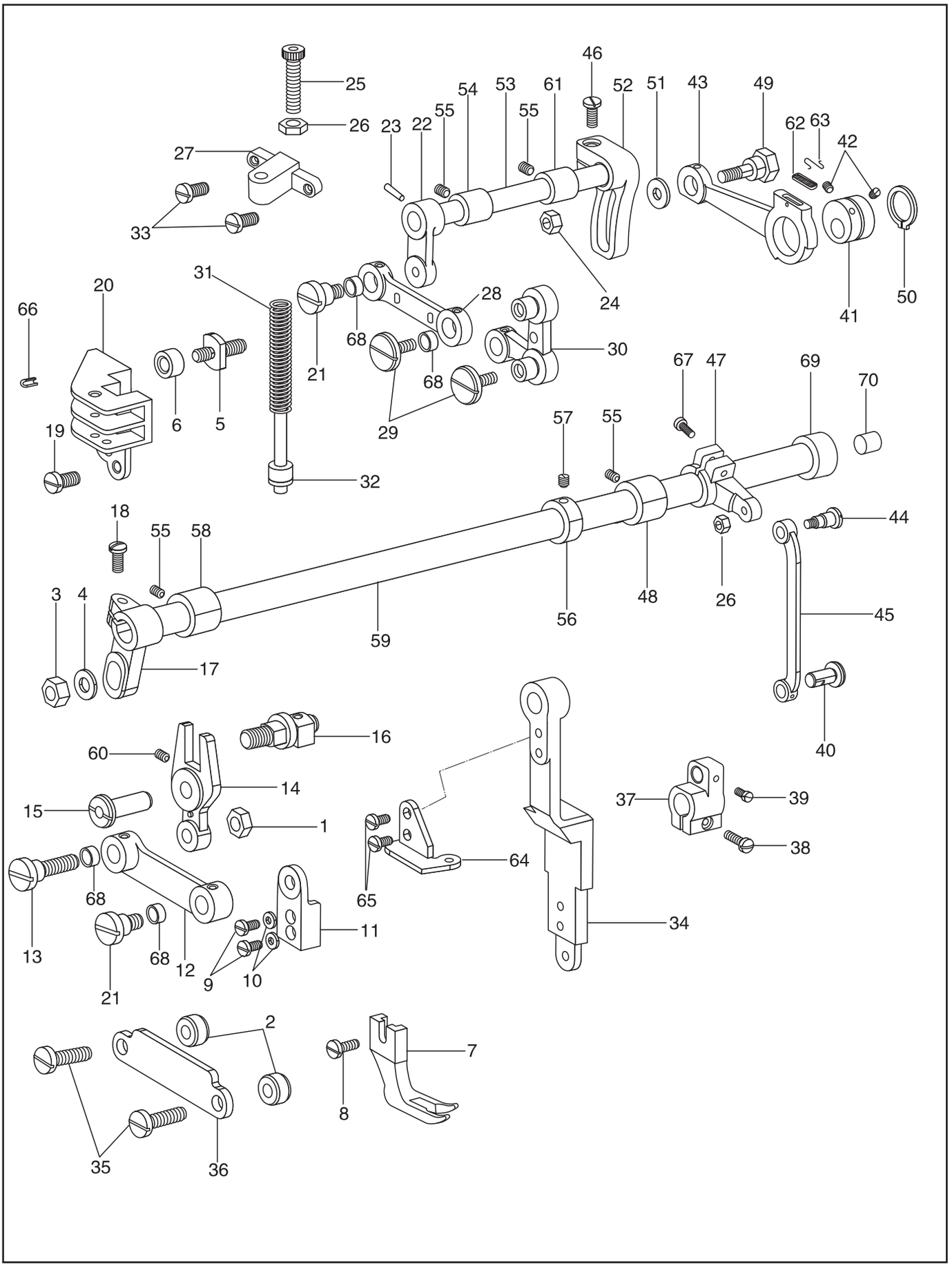
4. Feed mechanism



4. Feed mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
48	675WF1–002D15	Thread stitch regulator crank	1	1	
49	258WF4–001	Pin shaft, L	1	1	
50	22T6–008D3	Screw	2	2	
51	5WF1–001	Pin shaft, R	1	1	
52	J0.0.35	Screw	1	1	
53	61–04–01/B504	Screw	1	1	
54		Screw	4	4	GB/T70 M6x20
55	675WF1–002D11	Thread stitch cam	1	1	
56	675WF1–002D12	Roller shaft	1	1	
57	675WF1–002D13	Roller	1	1	
58	675WF1–002D14	Spring	1	1	
59	675WF1–002D18	Pin	1	1	
60	42WF2–006	Screw	1	1	
61		Ring	1	1	
62		Ring	1	1	GB896 6
63	675WF1–002D19	Thread stitch link	1	1	GB896 7

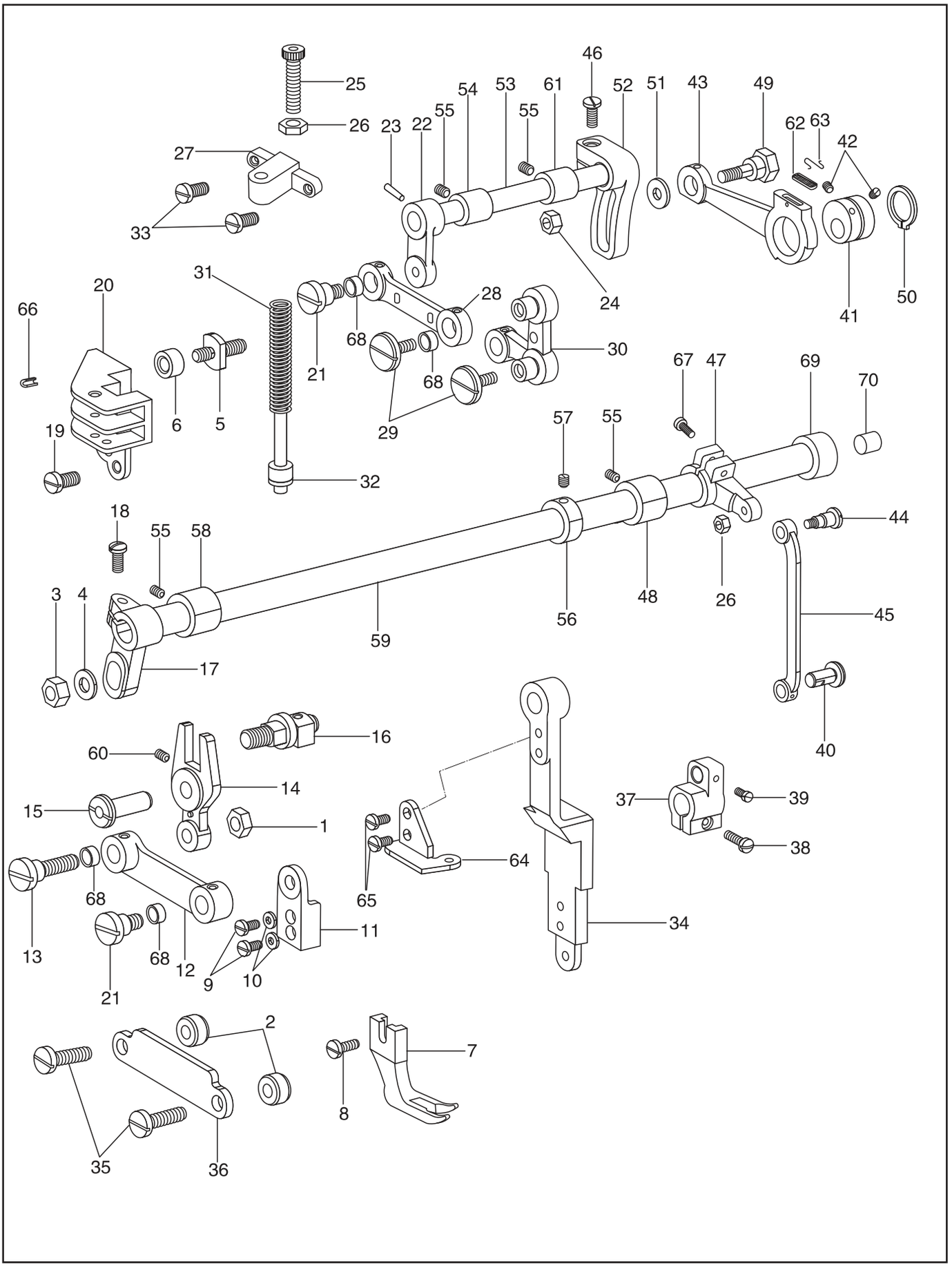
5. Upper feed mechanism



5. Upper feed mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	7WF5-001	Nut	1	1	
2	7WF5-002	Shim	2	2	
3	7WF5-003	Nut	1	1	
4		Washer	1	1	GB/T95 6
5	7WF5-004	Roller shaft	1	1	
6	7WF5-005	Roller	1	1	
7	7WF5-006	Walking foot	1	1	
8	61-04-01/B316	Screw	1	1	
9	7WF5-008	Screw	2	2	
10		Washer	2	2	GB93 4
11	7WF5-009	Clamper	1	1	
12	447WF2-004	Link	1	1	
13	447WF2-001	Shoulder screw	1	1	
14	7WF5-012	Lever	1	1	
15	474WF3-006	Shaft	1	1	
16	447WF2-005	Roller shaft assy.	1	1	
17	233WF5-023	Crank	1	1	
18	1WF4-032	Screw	1	1	
19	22T2-019	Screw	2	2	
20	7WF5-018	Lever guide	1	1	
21	447WF2-003	Screw	2	2	
22	7WF5-020	Feed lifting arm crank, L	1	1	
23		Pin	1	1	GB/T1174x20
24	7WF5-050	Nut	1	1	
25	7WF5-021	Screw	1	1	
26	7WF5-022	Nut	2	2	
27	7WF5-023	Bracket	1	1	
28	447WF2-002	Link	1	1	
29	7WF5-025	Screw	2	2	
30	447WF2-006	Feed crank	1	1	
31	7WF5-027	Spring, compression	1	1	
32	7WF5-028	Guide shaft	1	1	
33	20T2-031	Screw	2	2	
34	7WF5-030	Walking foot lever	1	1	
35	22T6-008D3	Screw	2	2	
36	81WF6-002	Presser plate	1	1	
37	258WF3-003	Feed shaft middle crank	1	1	
38	61-04-01/B504	Screw	1	1	
39	36T5-008E5	Pin screw	1	1	
40	258WF3-004	Connecting pin	1	1	
41	7WF5-032	Eccentric cam	1	1	
42	22T2-005B3	Screw	2	2	

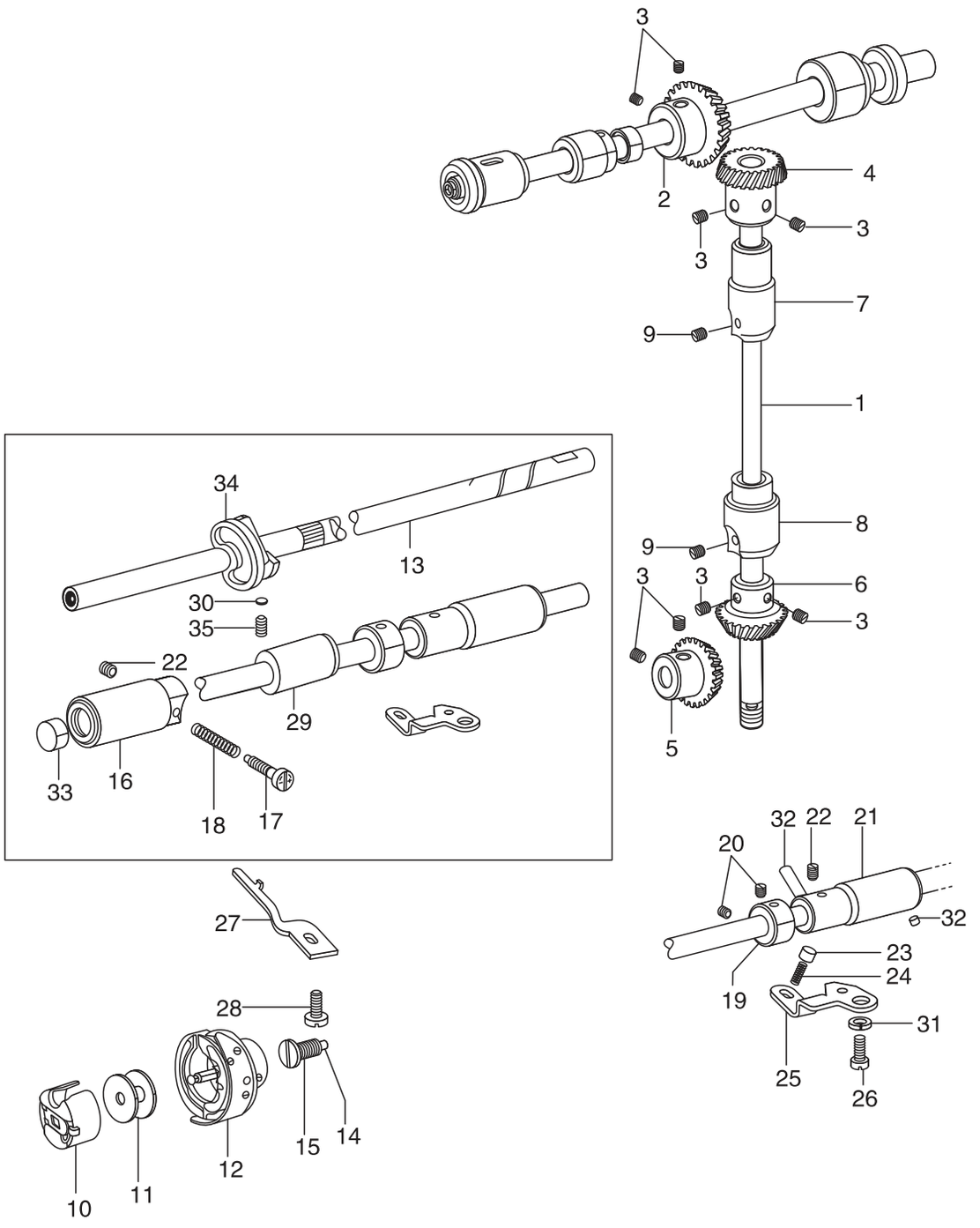
5. Upper feed mechanism



5. Upper feed mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
43	7WF5–034	Link complete	1	1	
44	7WF5–037	Screw	1	1	
45	258WF3–002	Link	1	1	
46	7WF5–039	Screw	1	1	
47	241WF3–003	Rear crank	1	1	
48	68WF5–010	Bushing	1	1	
49	7WF5–042	Screw	1	1	
50		Ring	1	1	GB894.1 25
51	7WF5–049	Washer	1	1	
52	7WF5–043	Link adjusting crank	1	1	
53	7WF5–044	Shaft	1	1	
54	271WF3–001	Bushing	1	1	
55	61–04–01/B308	Screw	3	3	
56	22T3–002B1	Collar	1	1	
57	22T3–002B2	Screw	2	2	
58	1KT2–003	Bushing	1	1	
59	652WF2–001	Swing shaft	1	–	
	633WF2–001	Swing shaft	–	1	
60	7WF5–048	Screw	1	1	
61	271WF3–002	Bushing	1	1	
62	7WF5–035	Oil felt	1	1	
63	7WF5–024	Spring	1	1	
64	7WF5–029	Position plate	1	1	
65	22T2–019	Screw	2	2	
66		Pin	2	2	GB/T879.1 3x8
67	16WF3–061	Screw	1	1	
68	242WF5–001	Bearing	4	4	
69	1KT2–004	Bushing	1	1	
70	530WF1–002	Rubber plug	1	1	Φ22

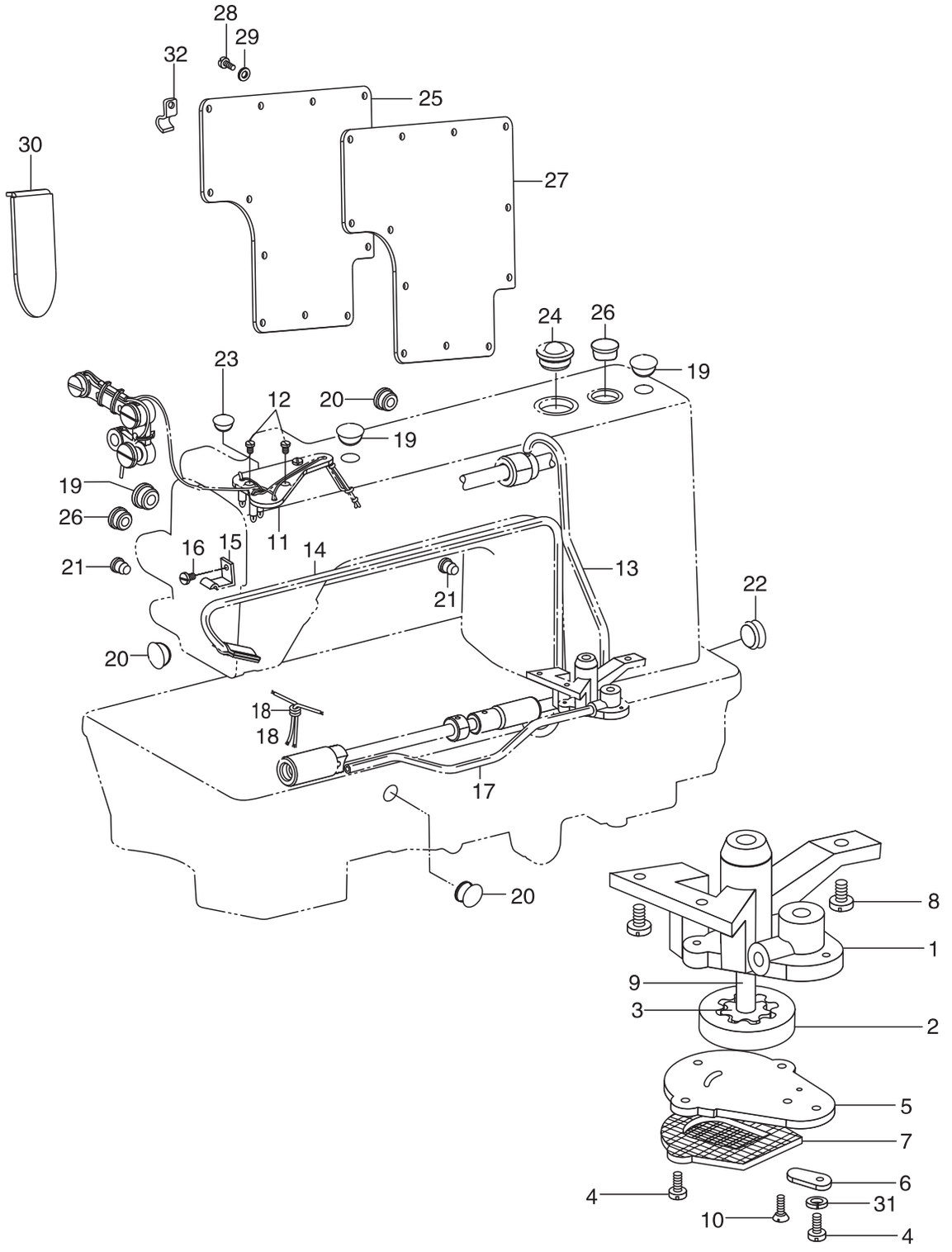
6. Hook mechanism



6. Hook mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	15WF1–001	Vertical shaft	1	1	
2	ZOA140379	Bevel gear, upper shaft	1	1	
3	22T2–005B3	Set screw	8	8	
4	ZOA140380	Bevel gear, vertical shaft, U	1	1	
5	ZOA140383	Bevel gear, lower shaft	1	1	
6	ZOA140382	Bevel gear, vertical shaft, L	1	1	
7	2KT1–015	Bush, vertical shaft, U	1	1	
8	2KT1–008	Bush, vertical shaft, L	1	1	
9	J0.0.40	Screw	2	2	
10	390WF3–004	Bobbin case	1	1	
11	24WF2–001	Bobbin	1	1	
12	390WF3–003	Hook assy.	1	1	
13	78WF3–002	Lower shaft	1	–	
	122WF3–001	Lower shaft	–	1	
14	22T4–001A1a2	Filter	1	1	
15	22T4–001A1a1	Screw	1	1	
16	68WF3–015	Bush, lower shaft, L	1	1	
17	22T4–005	Adjusting screw, oil	1	1	
18	22T4–006	Adjusting spring	1	1	
19	22T4–002B1	Collar	1	1	
20	J0.0.35	Screw	2	2	
21	68WF3–002	Bush, lower shaft, R	1	1	
22	J0.0.5	Screw	2	2	GB/T859 5
23	36T4–015	Plunger	1	1	
24	36T4–016	Spring	1	1	
25	22T4–010	Holder plate	1	1	
26	22T9–006	Screw	1	1	
27	258WF2–009	B/case holder position bracket	1	1	
28	22T4–015	Screw	1	1	
29	68WF3–016	Bush, lower shaft, M	1	1	
30	2KT5–032	Holder plate	2	2	
31		Washer	1	1	GB93 6
32	22T4–007C2	Oil tube	1	1	
33	68WF3–014	Oil seal	1	1	
34	233WF4–010	Trimmer driving cam	1	1	
35	2KT5–031	screw	2	2	

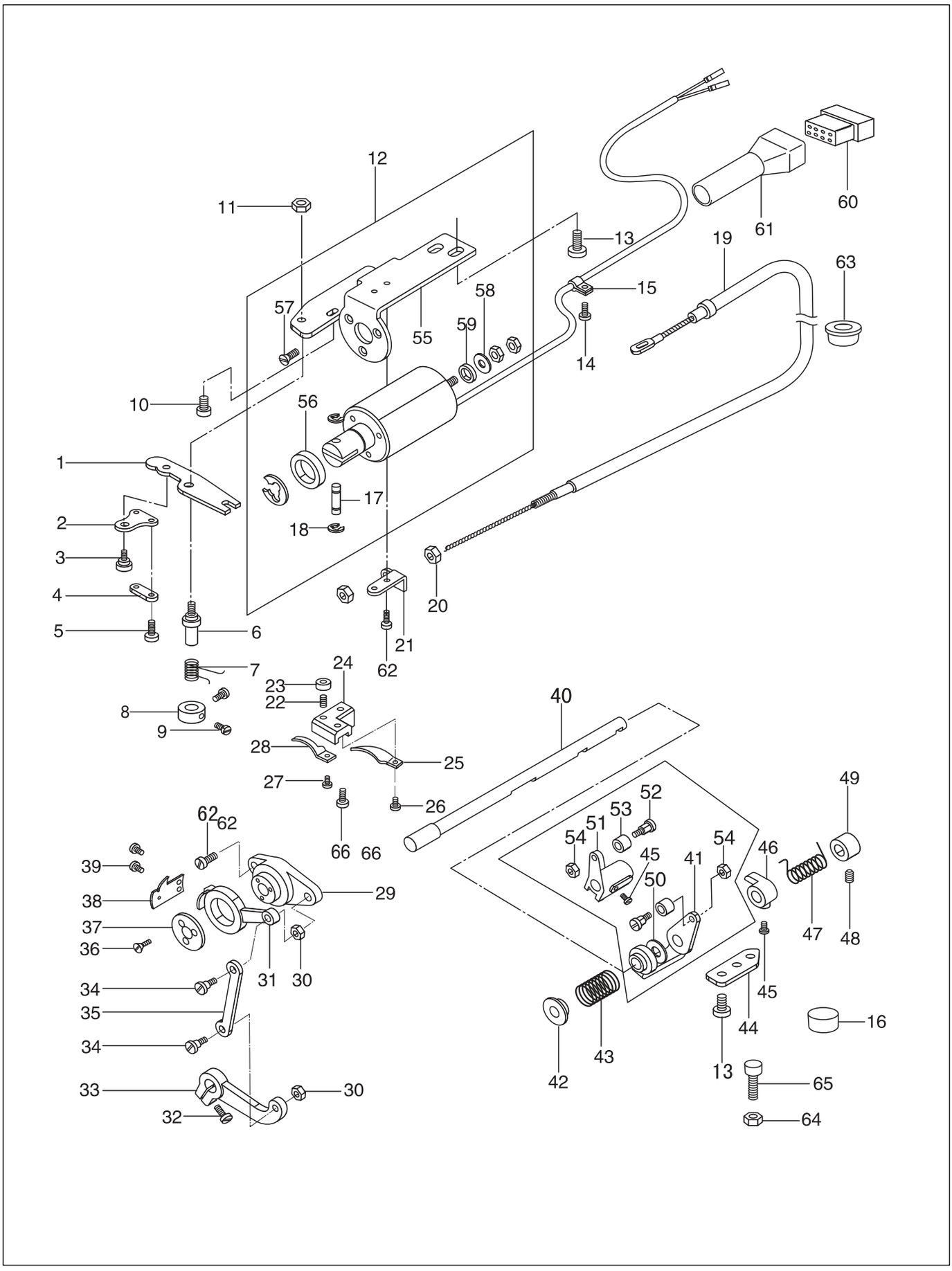
7. Lubrication mechanism



7. Lubrication mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	15WF4–003	Pump body	1	1	
2	15WF4–006	Big gear, pump	1	1	
3	15WF4–007	Small gear, pump	1	1	
4		Screw	3	3	GB/T67 M3x10
5	15WF4–004	Cover	1	1	
6	22T8–007	Adjusting plate	1	1	
7	22T8–008A	Filter set	1	1	
8	22T8–009	Screw	3	3	
9	15WF4–005	Shaft	1	1	
10		Screw	2	2	GB/T68 M3x10
11	7WF4–016	Setting plate	1	1	
12	22T8–012	Screw	2	2	
13	22T8–013D	Oil tube, U	1	1	
14	233WF8–003	Tube assy.	1	–	
	242WF1–004	Tube assy.	–	1	
15	22T8–016	Holder	1	1	
16	20T4–006	Screw	1	1	
17	68WF8–002	Oil tube, L	1	–	
	122WF5–001	Oil tube, L	–	1	
18		Oil wick	1	1	
19	22T1–003C3	Rubber cap	2	2	
20	22T1–003C4	Rubber cap	3	3	
21	22T1–015	Rubber cap	2	2	
22	22T1–016	Rubber cap	1	1	
23	22T1–017	Rubber cap	1	1	
24	22T1–008	Oil gauge window	1	1	
25	652WF1–004	Back cover	1	1	
26	13WF2–035	Rubber cap	2	2	
27	652WF1–005	Packing	1	1	
28	22T1–006	Screw	12	12	
29	22T1–007	Washer	12	12	
30	474WF1–009	Oil pan	1	1	
31		Washer, spring	1	1	GB93 4
32	62WF5–027	Thread finger	1	1	

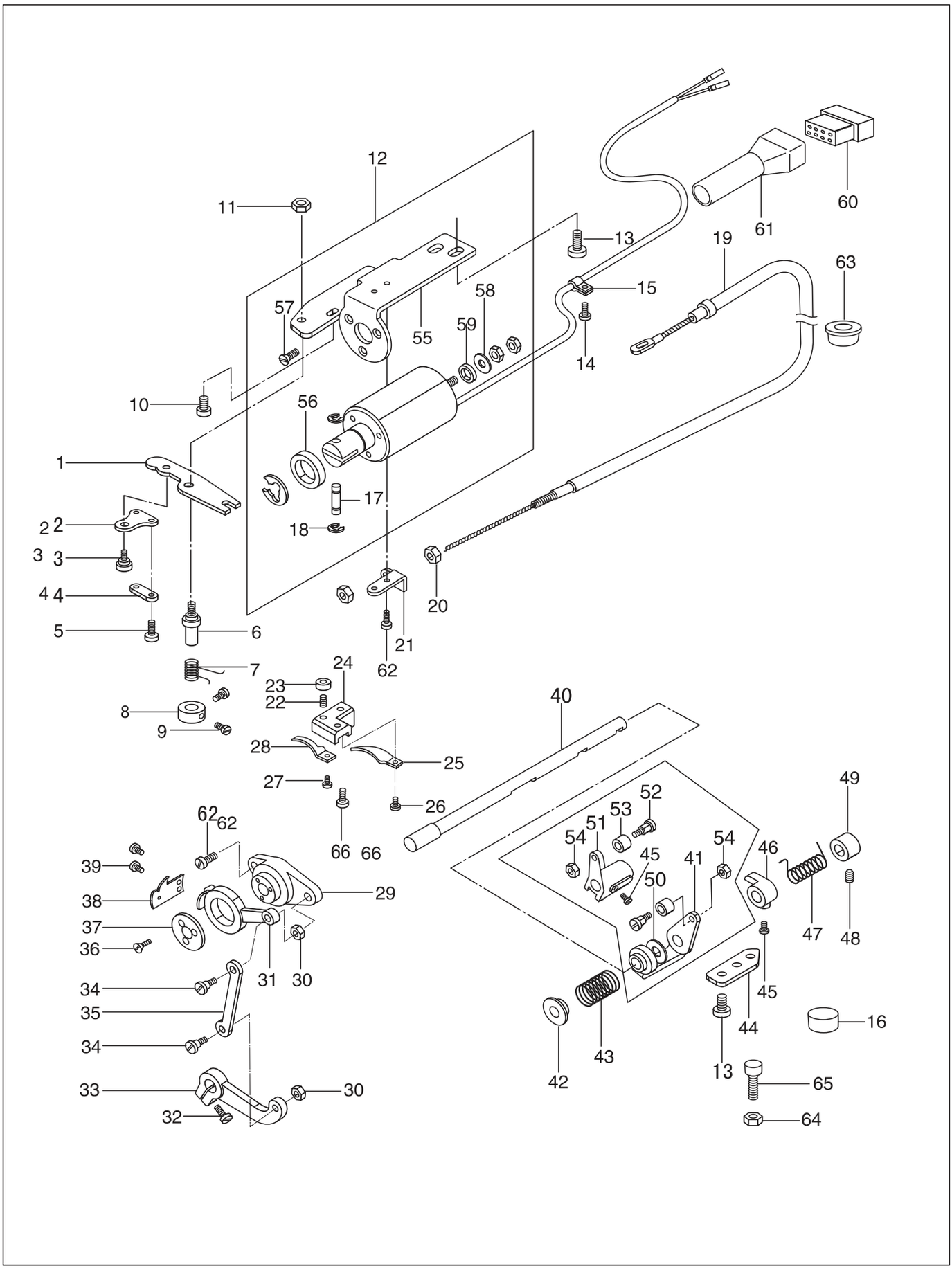
8. Thread trimming mechanism



8. Thread trimming mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	78WF1–004	Driven plate	1	1	
2	78WF1–005	Wire support	1	1	
3	78WF1–006	Screw	1	1	SM11/64 " x40x5
4	78WF1–007	Link	1	1	
5	37T2–203	Screw	2	2	SM1/8 " x44x7
6	78WF1–008	Screw pin, driven plate	1	1	
7	78WF1–009	Spring	1	1	
8	78WF1–010	Collar	1	1	
9	1WF1–024	Screw	2	2	SM9/64 " x40x6.5
10	22T4–015	Screw	1	1	SM11/64 " x40x10
11	36WF5–008	Nut	1	1	
12	390WF4–002	Thread trimmer solenoid assy.	1	–	
	356WF3–001	Thread trimmer solenoid assy.	–	1	
13	36WF1–056	Screw	4	4	SM15/64 " x28x12
14	21WF4–047	Screw	1	1	SM11/64 " x40x7.5
15	84WF1–022	Wire holder	1	1	
16	241WF6–004	Buffer pad	1	1	
17	78WF1–001A	Pin	1	1	
18		Retaining ring	2	2	GB896 4
19	390WF4–001A	Tension release wire	1	–	
	692WF6–001	Tension release wire	–	1	
20	2KT4–020	Nut	2	2	
21	78WF1–012	Tension release lever	1	1	
22	78WF1–013	Screw	1	1	SM9/64 " x40x8.5
23	78WF1–014	Nut	1	1	
24	78WF1–015	Holder, F-knife	1	1	
25	78WF1–016	Lower thread finger	1	1	
26	2KT6–017	Screw	1	1	SM9/64 " x40x6
27	2KT5–002	Screw	1	1	SM9/64 " x40x4.3
28	78WF1–002	Fixed knife	1	1	
29	78WF1–017	Holder, M-knife	1	1	
30	2KT5–013	Nut	2	2	
31	78WF1–018	Holder, M-knife, L	1	1	
32	22T6–008D3	Screw	1	1	SM11/64 " x40x12
33	78WF1–019	Driven crank	1	1	
34	78WF1–020A	Screw	2	2	SM11/64 " x40
35	78WF1–020	Link	1	1	
36	78WF1–021	Screw	3	3	SM1/8 " x44x5.2
37	78WF1–022	Washer	1	1	
38	78WF1–003	Movable knife	1	1	
39	2KT5–007	Screw	2	2	SM11/64 " x40
40	78WF1–023	Thread trimmer cam lever shaft	1	1	
41	78WF1–024B	Thread trimmer cam lever, R	1	1	

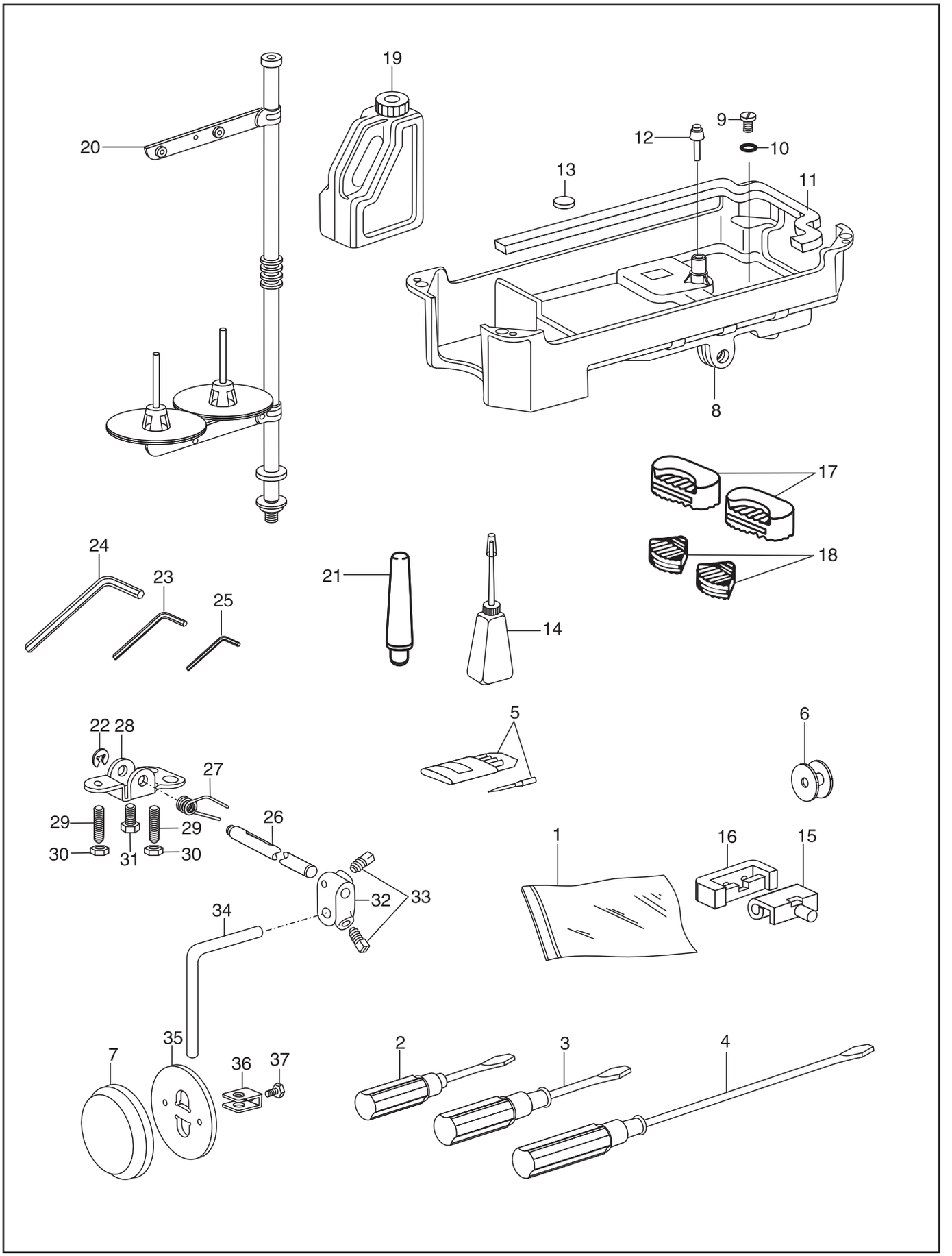
8. Thread trimming mechanism



8. Thread trimming mechanism

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
42	78WF1–025	Collar	1	1	
43	78WF1–026	Spring	1	1	
44	241WF6–002	Stopper plate	1	1	
45	21WF3–010	Screw	3	3	SM15/64 " x28x6
46	78WF1–028	Positioning block	1	1	
47	78WF1–029	Spring	1	1	
48	22T3–002B2	Screw	2	2	SM1/4 " x40x4
49	78WF1–030	Collar	1	1	
50	78WF1–024F	Plastic ring	1	1	
51	78WF1–024A	Thread trimmer cam lever, L	1	1	
52	78WF1–024C	Screw	2	2	SM3/16 " x28x8.5
53	78WF1–024D	Roller	2	2	
54	78WF1–024E	Nut	2	2	SM3/16 " x28
55	78WF1–001B	Thread trimmer solenoid base	1	1	
56	78WF1–001C	Seal washer, big	1	1	
57		Screw	3	3	GB/T819.2 M4x6
58		Washer	1	1	GB/T96.1 5
59	78WF1–001D	Seal washer, small	1	1	
60	356WF4–002	Connector	1	1	
61	356WF4–003	Cover	1	1	
62	21WF4–047	Screw	4	4	SM11/64 " x40x7.5
63	2KT5–041	Guard	1	1	
64		Nut	1	1	GB6172 M6
65	241WF6–003	Screw	1	1	
66	22T2–019	Screw	1	1	

10. Accessories



10. Accessories

No.	Part Number	Name	Qt.		Remark
			0316C	0332A	
1	33TF–010	Accessory bag	1	1	
2	33TF–014	Screw driver, S	1	1	
3	33TF–013	Screw driver, M	1	1	
4	33TF–012	Screw driver, L	1	1	
5		Needle	4	4	DPx17 21#
6	24WF2–001	Bobbin	3	3	
7	22T9–003B8	Pad	1	1	
8	233WF9–003	Oil pan	1	–	
	356WF5–001	Oil pan	–	1	
9	22T9–001A2	Screw	1	1	
10	22T9–001A3	Washer	1	1	
11	2KT9–008	Gasket	1.5	1.5	
12	165F01001	Bar	1	–	
	4WF5–002	Bar	–	1	
13	22T9–012	Magnet	1	1	
14	33TF–011	Oil pot	1	1	
15	22T9–007F1	Head hinge	2	2	
16	22T9–007F2	Cushion, head hinge	2	2	
17	1KT5–004	Head cushion, L	2	2	
18	1KT5–003	Head cushion, S	2	2	
19	1F–012	Oil tank	1	1	
20	4F–007	Thread stand assy.	1	1	
21	1KT5–007	Head rest	1	1	
22		Wrench	1	1	GB896 9
23		Wrench, 2mm	1	1	2GB/T5356–1998
24		Wrench, 3mm	1	1	3GB/T5356–1998
25		Wrench, 2.5mm	1	1	2.5GB/T5356–1998
26	233WF9–007	Lifter shaft	1	1	
27	233WF9–008	Spring	1	1	
28	233WF9–009	Bracket	1	1	
29	22T9–001A9	Adjusting screw	2	2	
30	22T9–001A10	Adjusting nut	2	2	
31	1WF4–032	Screw	1	1	
32	22T9–003B3	Bracket	1	1	
33		Screw	1	1	GB/T5781 M6x12 M6x20
34	22T9–003B2	Lifter bar	1	1	
35	22T9–003B5	Knee lifter plate	1	1	
36	22T9–003B6	Stopper	1	1	
37	22T9–003B7	Screw	1	1	

⚠Safety Instruction

1. Users are required to read the operation manual completely and carefully before installation or operation.
2. This product must be installed or operated by properly trained personnel. All power must be turned off during installation, and remember not to operate with power.
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 matches the rated voltage ±20% indicated on the motor's name plate.
6. Do not operate in direct sun light, outdoors area and where the room temperature is over 45°C or below 0°C.
7. Please avoid operating near the heater at dew area or at the humidity below 10% or above 90%.
8. Do not 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 head.
    4. Repairing or doing any mechanical adjustment.
    5. Machines idling.
14. Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.
15. All the spare parts for repair must be provided or approved by the manufacturer.
16. Don't use any objects or force 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

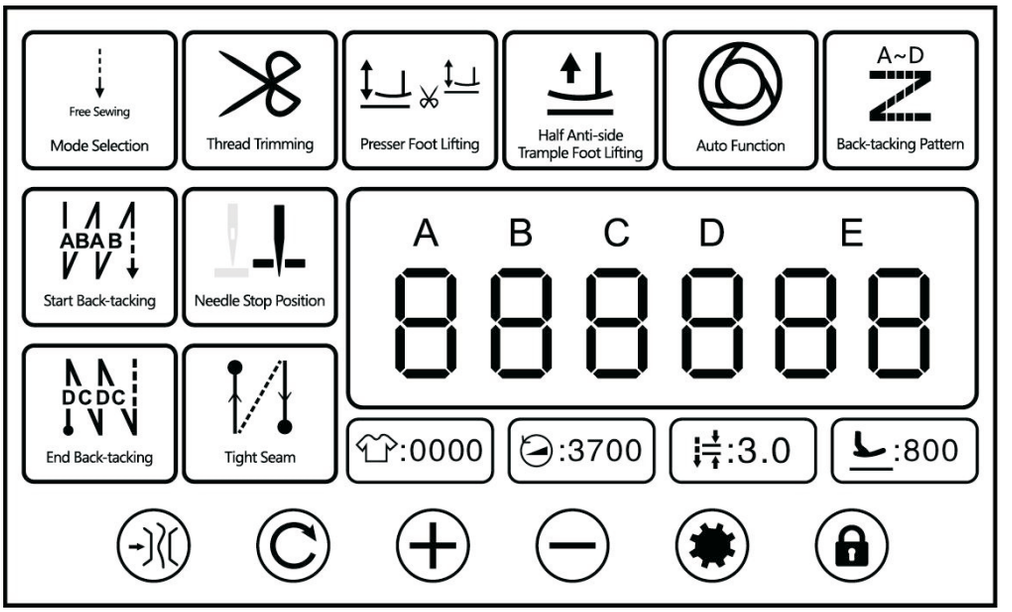
Any trouble found within warranty period under normal operation, it will be repaired free of charge. However, maintenance cost will be charged in the following cases even if within warranty period:

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

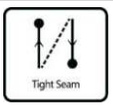
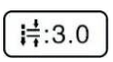
Note: We make our best effort to test and manufacture the product for assuring the quality. However, it is possible that this product can be damaged due to external magnetic interference and electronic static or noise or unstable power source more than expected; therefore the grounding system of operate area must guarantee the good earth and it's also recommended to install a failsafe device (such as residual current breaker).

1. Interface and operation instructions

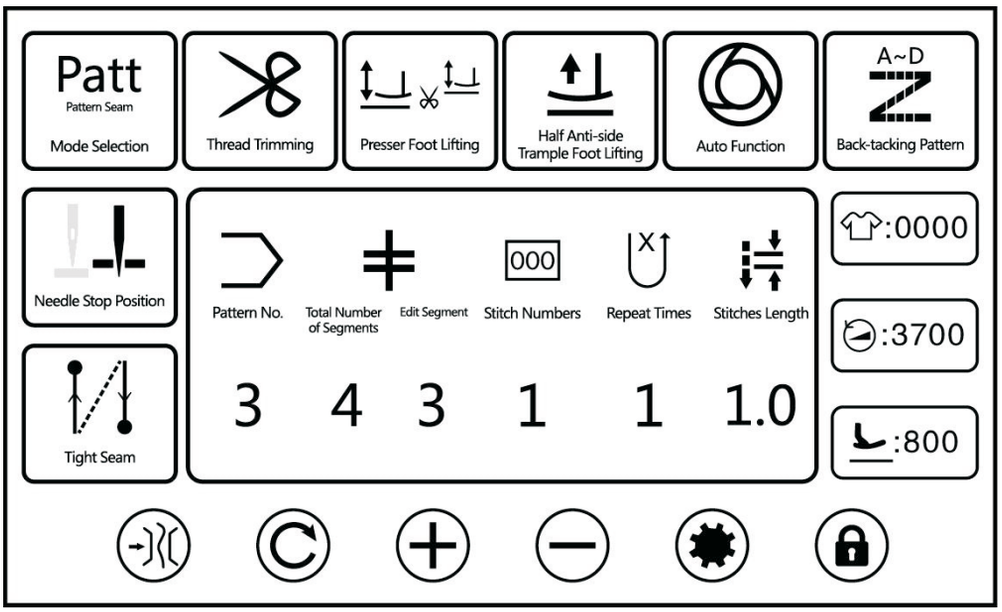
1.1 Main interface description



Name	Key	Indicate
Clamp function setting		If click, set used or cancelled clamp function.
Constant stitch sewing switching key		In constant stitch sewing mode, if click, switch to stitch numbers and segments display interface.
Parameter increase		If click, it can increase parameters. If long-press, it can continuously increase parameters.
Parameter decrease		If click, it can decrease parameters. If long-press, it can continuously decrease parameters.
Set key		If click, enter the parameter setting interface.
Lock screen key		If you click, switch the lock screen and unlock.
Mode selection	Free Sewing Mode Selection	If click, shift to free sewing, continuous back seam mode, constant stitch sewing and pattern seam mode.
Start back-tacking	ABAB Start Back-tacking	If click, executions starting back seam B segment, execution starting back seam (A, B segment) 1 time or execution starting back seam (A, B segment) 2 times. If long-press, switch to back-tacking setting.
End back-tacking	DCDC End Back-tacking	If click, execution terminates back seam C segment, execution terminates back seam (C, D segment) 1time or execution terminates back seam (C, D segment) 2 times. If long-press, switch to back-tacking setting.
Thread trimming	Thread Trimming	If click, set used or cancelled trimming function.

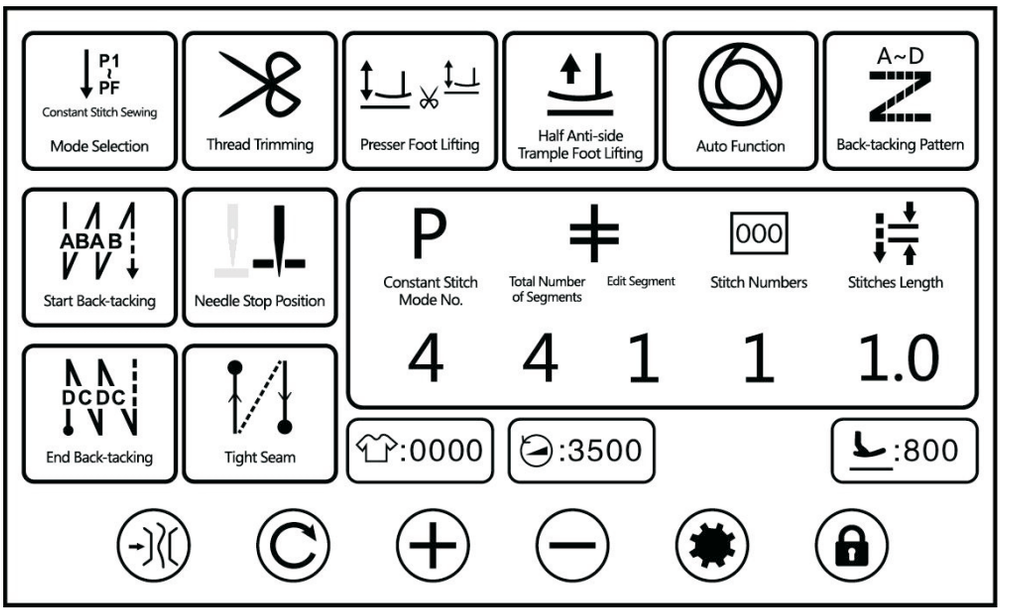
Needle stop position		If click, switch the needle stop position after sewing (up position / down position).
Tight seam		If click, switch between function OFF, starting tight seam function ON, ending tight seam function ON and full function in turn. If long-press, switch to tight seam function setting.
Presser foot lifting		If click, switch between automatic presser foot lifting after pause, automatic presser foot lifting after trimming, full function and function off in turn.
Half anti-side trample foot lifting		If click, set used or cancelled half anti-side trample foot lifting function.
Auto function		In constant stitch sewing mode, If click, set used or cancelled auto function.
Back-tacking pattern		If click, set used or cancelled back-tacking pattern function.
Slow launch setting		If click, set used or cancelled slow launch function.
Advanced parameter settings		If double click, enter the advanced parameter setting interface.
Trimming count display		The trimming count value is displayed. If double click, the count is cleared.
Sewing speed display		The sewing speed of the current mode is displayed. If click, select this data, and you can adjust the data by parameter increase and decrease keys.
Sewing stitch length display		The stitch length of the current mode is displayed. If click, select this data, and you can adjust the data by parameter increase and decrease keys.
The highest presser foot height display		The highest presser foot height is displayed. If click, select this data, and you can adjust the data by parameter increase and decrease keys.

1.2 Pattern seam interface description



No.	Items	Range	Default	Description
1	Pattern No.	1-9		"3" stands for the number of the pattern. The figure represents the 3rd pattern.
2	Total Number of Segments Edit Segment	1-10		"4" represents the total number of segments of the pattern. If you click, you can select the total number of segments. "3" represents the segment No. of the pattern. As shown in the figure, there are 4 patterns in the 3rd pattern. The figure is the data of the 3rd segment.
3	Stitch Numbers	1-99		"1" represents the stitch numbers of the pattern. As shown in the figure, the number of stitches in the 3rd segment of the 3rd pattern is 1.
4	Repeat Times	1-9		"1" represents the repeat times of the pattern. As shown in the figure, the repeat times for the 3rd segment of the 3rd pattern is 1.
5	Stitches Length	0-5.0		"1.0" represents the stitches length of this pattern. As shown in the figure, the stitches length of the 3rd segment of the 3rd pattern is 1.0 mm.

1.3 Constant stitch sewing interface description



No.	Items	Range	Default	Description
1	P Constant Stitch Mode No.	1-10		"4" represents the number of constant stitch sewing mode. As shown in the figure, it represents 4th constant stitch sewing mode.
2	Total Number of Segments / Edit Segment	1-4		"4" represents the total number of segments of the constant stitch sewing mode. If clicked, the total number of segments can be selected. "1" represents the segment No. of constant stitch sewing. As shown in the figure, it represents the data of the 1st segment of the 4 segments.
3	000 Stitch Numbers	0-99		"1" represents the number of stitches in this segment. As shown in the figure, the number of stitches in the 1st segment of the 4 segments is 1.
4	Stitches Length	0-8.0		"1.0" represents the stitches length of the constant stitch sewing mode. As shown in the figure, the stitches length of the 1st segment of the 4 segments is 1.0mm.

1.4 Debug interface description

Long press on the main screen, the debugging interface will be displayed.

No.	Items	Range	Default	Description	Parameter
1	Main shaft motor zero-point correction				P92
2	Up position quick adjustment				P72
3	Back-tacking motor zero-point correction	-500~500	0		P129
4	Tacking stitch length compensation	-100~100	0		P74

5	Back-tacking stitch length compensation	-100~100	-10		P75
6	Tacking stitch length compensation in high speed	-100~100	-15		P144
7	Back-tacking stitch length compensation in high speed	-100~100	-10		P145
8	Back-tacking stitch overall compensation	-20~20	0		P11
9	Large stitch length back-tacking stitch overall compensation	-20~20	0		P244

2. User parameter setting interface

Click  in the interface of free sewing, pattern seam, or W sewing to enter user parameter setting interface.

The parameter setting interface catalog is as follows.

No.	Setting
1	Main shaft motor setting
2	Tight seam function setting
3	Back-tacking setting
4	Counter setting
5	Soft start setting
6	Machine switch setting
7	Clamp & tension setting
8	Interface display
9	Layer seam setting (invalid)
10	Clamp function without any thrum
11	Presser foot lift function setting when start sewing

No.	Items	Range	Default	Description	Parameter
2.1 Main shaft motor setting					
2101	Needles goes up automatically as power turned on	OFF/ON	OFF		P56
2.2 Tight seam function setting					
2201	Starting tight seam				
2202	Ending tight seam				
2.2.1 Starting tight seam					
22101		0-12	2	When the value is 0, the starting tight seam mode is turned off.	P108
22102		0-6.0	0.5	Stitches length	P99
22103		100-2000	1200	Speed	P107
22104		CW/CCW	CW	Direction	P100

2.2.2 Ending tight seam					
22201		0-12	2	When the value is 0, the ending tight seam mode is turned off.	P160
22202		0-6.0	0.8	Stitches length	P153
22203		100-2000	1200	Speed	P154
22204		CW/CCW	CW	Direction	P159
2.3 Back-tacking setting					
2301	Start back-tacking speed	200-3200	1200		P04
2302	End back-tacking speed	200-3200	1200		P05
2303	Mode selection for bar-tacking	OFF/ON	ON		P08
2304	The constant-stitch whether can execute end back-tacking sewing function selection	OFF/ON	ON		P10
2305	Star back-tacking mode selection	OFF/ON	ON		P12
2306	Mode selection at the end of start back-tacking	OFF/ON	ON		P13
2307	Start back-tacking stitch compensation 1	0-200	130		P18
2308	Start back-tacking stitch compensation 2	0-200	130		P19
2309	End back-tacking stitch compensation 3	0-200	130		P25
2310	End back-tacking stitch compensation 4	0-200	130		P26
2311	Back-tacking stitch compensation 5	0-200	130		P32
2312	Back-tacking stitch compensation 6	0-200	130		P33
2313	Start back-tacking stitch compensation 11	0-200	120		P237
2314	Start back-tacking stitch compensation 12	0-200	120		P238
2315	End back-tacking stitch compensation 13	0-200	120		P239
2316	End back-tacking stitch compensation 14	0-200	120		P240
2317	Back-tacking stitch compensation 15	0-200	120		P241
2318	Back-tacking stitch compensation 16	0-200	120		P242
2319	Pattern sewing compensation 1	0-200	130		P235
2320	Pattern sewing compensation 2	0-200	120		P236
2.4 Counter setting					
2401	Counter selection	0-2	1	0: Counter does not count 1: Count up sewing counter (Each time the thread is cut, the count is increased by 1; the current value and the set value are the same, and the count screen is displayed.) 2: Count-down sewing counter (1 counts each	

				time the thread is trimmed; the count screen is displayed after the current value becomes 0)	
2402	Counter current value /setting value	0-9999	0/9999	The current value is the current actual value; the setting value is a reference value	
2403	Sewing counter trimming time	0-50	1		
2404	Bobbin thread count setting				
2405	Maintenance stitch count setting				
2.5 Soft start setting					
2501	Soft start switch	ON/OFF	OFF		P14
2502	Stitch numbers for soft start	1-15	2		P08
2503	Soft start first stitch speed	200-1500	400		P90
2504	Soft start second stitch speed	200-1500	1000		P91
2505	Soft start speed after second stitch	200-1500	1500		P07
2.6 Machine switch setting					
2601	Manual switch A setting	0-6	5	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function	P15
2602	Manual switch B setting	0-6	3	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function	P174
2603	Manual switch C setting	0-12	7	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function 7: Second stitch length switching function	P175
2604	Manual switch D setting	0-12	3	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function	P176

2605	Manual back-tacking function selection under pattern sewing	0-1	1	0: If click, it will clear the current number of pattern stitches and restart. It is used for corner sewing to avoid protruding one stitch. 1: If you press it for a long time, you can sew the pattern backwards.	P118
2.7 Clamping & tension setting					
2701	Tension strength setting	1-80	30		P103
2702	With or without tension while foot lifting action	ON/OFF	OFF		P35
2703	Wiping / clamping strength setting	0-11	8	0: OFF 1: Wiping function 2~11: Clamping function, the higher the value, the stronger the action.	P37
2704	Tension function switch	ON/OFF	ON		P36
2705	The foot lift height of thread tension release start action when knee-control foot lift	0-4799	800		P30
2706	Thread tension release function switch when knee-control foot lift	0-1	1		P31
2.8 Interface display					
2801	Brightness	5-100	80	The larger the value, the higher the brightness.	
2802	Main interface locked automatically	0-900	60		
2803	Restore factory defaults				
2804	Language	Chinese / English	Chinese		
2.9 Layer seam setting (invalid)					
2901	Layer seam mode switch	ON/OFF	OFF		P119
2.10 Clamp function without any thrum					
21001	Clamp function without any thrum switch	ON/OFF	OFF		P111
2.11 Presser foot lift function setting when start sewing					
21101	Presser foot lift function setting switch when start sewing	ON/OFF	OFF		
21102	Presser foot lift function setting start output angle when start sewing	1-359	1		
21103	Presser foot lift function setting end output angle when start sewing	1-359	80		
21104	The height of presser foot lift when start sewing	0-4799	60		

3. Advanced parameter setting interface

Double-click ◯ in the interface of free sewing, pattern seam, or W sewing to enter the advanced parameter setting interface. The parameter setting interface catalog is as follows.

No.	Setting

1	Trimming function setting
2	Clamp function setting
3	Foot lifting setting
4	Tension setting
5	Pedal setting
6	Safety protection setting
7	Stitch length setting of stepping back-tacking
8	Testing mode
9	State information
10	Main shaft motor setting
11	Clamp function without any thrum
12	Layer seam setting (reserved)
13	Other settings

No.	Items	Range	Default	Description	Parameter
3.1 Trimming function setting					
3101	Main shaft motor speed when trimming	100-500	250		P49
3102	Trimming action time	10-990	250		P54
3103	Trimming engage angle	0-359	2		P80
3104	Trimming retract angle	0-359	160		P82
3105	Trimming full output time	1-200	100		P84
3106	Periodic signal of trimming output (10%)	1-10	7		P85
3107	Trimming return time	60-990	100		P110
3.2 Clamp function setting					
3201	Clamp start angle	10-359	80		P78
3202	Clamp end angle	10-359	180		P79
3203	Wiper thread action time	10-990	40		P55
3204	The delay time before wiper thread	5-990	5		P109
3.3 Presser foot setting					
3301	Presser foot lay down time	10-990	120		P52
3302	Presser foot lift highness compensation when pedal return to intermediate step at sewing stop	0-4700	1000	Set 80 as 0 compensation, go to the major adjustment for positive compensation, the height of the presser foot will increase, go to the minor adjustment for the negative compensation, the height of the presser foot will decrease.	P125
3303	The highest of presser foot lift highness	0-4799	1500		P136
3304	Presser foot speed	20-600	200		P146
3305	Zero correction of foot lifting motor	0-4799	1300		P130

3306	Presser foot step motor steady current	10-100	15		P150
3307	Presser foot motor maximum current	10-100	50		P152
3308	Electronic knee-control device the lowest presser foot lift height	0-4799	600		P135
3309	Electronic knee-control device the highest presser foot lift height	0-4799	1500		P126
3310	The highest of presser foot lift highness limit	0-4799	1600		P172
3311	Kneeling device starting AD value	0-1023	600		P122
3312	Rotation direction of the presser foot motor	0-1	700		P147
3313	Knee-control function selection	0-2	1	0: OFF 1: Valid when the main shaft motor stops 2: Valid when the main shaft motor runs and stops	P127
3314	The highest presser foot lift height of electric knee-control in sewing	0-4799	100		P148
3315	Presser foot lowering speed	0-600	0		
3316	Presser foot lifting or lowering buffer mode	0-1	0		
3.4 Tension setting					
3401	Tension starting angle	1-359	30		P101
3402	Tension ending angle	1-359	180		P102
3.5 Pedal setting					
3501	Speed curve adjustment (%)	10-100	80		P02
3502	The voltage of forward step pedal point	30-1000	520		P21
3503	The voltage of intermediate step pedal point	30-1000	420		P22
3504	The voltage of half heeling pedal point	30-1000	270		P23
3505	The voltage of heeling pedal point	30-1000	130		P24
3506	Delay time of half heeling pedal	10-900	100		P93
3507	Pedal parameter combination selection	0-3	0		
3.6 Safety protection setting					
3601	Machine protection switch testing	0-2	1	0: OFF 1: Testing zero signal 2: Testing positive signal	P66
3602	Oil level lower protection testing	OFF/ON	OFF		P120
3603	Setting high voltage protection value	850-1023	880	When the external input AC voltage is converted into DC voltage and the value exceeds the set value, the system will alarm E01 and stop working.	P89
3604	Presser foot lifting protection time	1-60	30		P57

3605	Thread tension releasing electromagnet protection time	1-10	2		P98
3.7 Stitch length setting of stepping back-tacking					
3701	Back-tacking motor zero-point correction	-500~500	0		P129
3702	Normal stitch length	0-9.0	6.0		P131
3703	Stitch length reference value setting				
3704	Tacking stitch length compensation	-100~100	0		P74
3705	Back-tacking stitch length compensation	-100~100	0		P75
3706	Back-tacking stitch compensation	0-200	0		P243
3707	Back-tacking step motor steady current	1-12	6		P149
3708	Back-tacking step motor maximum current	1-12	8		P151
3709	Manual close stitches distance	0-9.0	2.0		P132
3710	Correction stitches distance of manual button A	0-9.0	0		P71
3711	Correction stitches distance of manual button B	0-9.0	0		P170
3712	Correction stitches distance of manual button C	0-9.0	9.0		P171
3713	Correction stitches distance of manual button D	0-9.0	0		P173
3714	Maximum stitch length limit	0-12.0	9.0		P123
3715	Back-tacking response time when after free sewing end back-tacking start	20-350	125		P77
3716	Large stitch length setting	0-12.0	8.0		P245
3717	Speed limit of start back-tacking, end back-tacking and bar-tacking when in large stitch length setting	200-3000	1800		P246
3718	Back-tacking corner stitch compensation 1	-100~100	0		P247
3719	Back-tacking corner stitch compensation 2	-100~100	0		P248
3720	Large stitch length tacking stitch length compensation in high speed	-200~200	10		P254
3721	Large stitch length back-tacking stitch length compensation in high speed	-200~200	26		P255
3722	Back-tacking step motor speed	50-1000	600		
3723	Stepping motor speed of presser foot zero point back to the stitch length area	50-1000	380		
3724	The angle of stepping motor	0-359	95		

	starts to return to the tacking stitch length area when start sewing				

3.7.3 Stitch length reference value setting

Forward	Stitch length	Backward	Stitch length
1mm		1mm	
2mm		2mm	
3mm		3mm	
4mm		4mm	
5mm		5mm	
6mm		6mm	
7mm		7mm	
8mm		8mm	
9mm		9mm	
10mm		10mm	
11mm		11mm	
12mm		12mm	

3.8 Testing mode

3801	Testing mode switch	ON/OFF	OFF	Perform the cycle of start-sewing-stop-thread trimming at the test speed.	
3802	Output function single testing				
3803	Testing mode setting				

3.8.2 Output function single testing

	Trimming				
	Presser foot				
	Thread clamping				

3.8.3 Autorun test mode

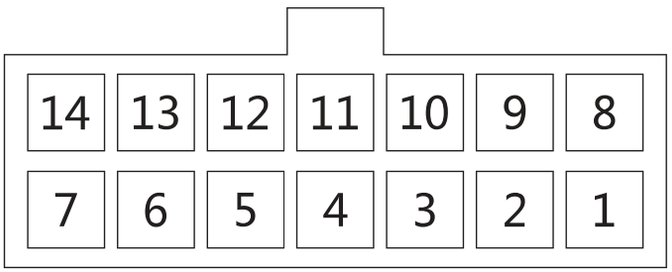
Period	Testing speed (when the test speed is 0,the current cycle is not executed)	Running time (0.1s)	Stop time (0.1s)	Motor running direction	Periodic time (m) (No limit when time is 0)
1	2000	30	10	CCW	0
2	0	0	0	CCW	0
3	0	0	0	CCW	0
4	0	0	0	CCW	0
5	0	0	0	CCW	0

3.9 State information					
3901	Version number				
3902	Motor speed display			Display current motor speed	
3903	Needle position angle value			Display the current motor angle of the machine	
3904	Pedal AD value			Display the current AD value of the pedal	
3905	Busbar voltage AD value				
3906	Oil level sensor AD value				
3907	Knee moving position sensor AD value				
3908	Trimming position sensor AD value				
3909	Presser foot lift highness sensor AD value				
3910	Grating signal				
3911	SY value				
3.9.1 Version number					
39101	Control box version number				
39102	Control box vice version number				
39103	Display board version number				
39104	Step drive version number				
39105	Control box version number 2				
3.10 Main shaft motor setting					
31001	Main shaft motor maximum speed limit	0-2500	2200		
31002	Main shaft motor zero-point correction				P129
31003	Up position quick adjustment				P72
31004	Down position quick adjustment				P73
31005	Speed limit of manual back-tacking	0-3200	1800		P16
31006	Reverse angle function selection after trimming	ON/OFF	OFF		P46
31007	Adjustment of reverse angle after trimming	10-50	160		P47
31008	Up position value	0-359	260		P58
31009	Down position value	0-359	70		P59
31010	Low (positioning) speed	100-500	210		P48
31011	Stopping strength as half-way	1-45	16		P44
31012	Stopping strength after trimming	1-50	30		P29
31013	Up / down needle position distance value	0-359	170	In the quick setting interface of the needle position for the upper and lower stops, when	P86

				the upper positioning value is saved, the lower positioning value will be automatically calculated based on the upper and lower positioning distance values.	
31014	Main shaft motor rotation direct setting	CCW/CW	CCW	CW: Clockwise CCW: Counterclockwise	P43
31015	Main shaft motor maximum current (A)	0-20	10		P94
31016	Main shaft motor lockedrotor current (A)	0-20	10		P96
31017	Main shaft motor normal current (A)	0-20	16		P106
31018	Main shaft motor encoder type selection	No magnetic ring / With magnetic ring	No magnetic ring		P111
31019	Main shaft motor type selection	0-50	2		P168
3.11 Clamp function without any thrum					
31101	The delay time before hook thread with clamp function without any thrum	0-990	100		P112
31102	The hook thread action time with clamp function without any thrum	0-990	30		P113
31103	The return back time of hook thread with clamp function without any thrum	0-990	30		P114
31104	Duty cycle for hook thread with clamp function without any thrum	0-100	70		P115
31105	The suction time for clamp function without any thrum	0-5000	1000		P116
31106	Duty cycle for pull thread with clamp function without any thrum	0-100	80		P117
3.12 Layer seam setting (invalid)					
31201	Layer seam mode rotation speed over thick	200-3700	200		
31202	Fabric thickness sensor AD value	0-1023	0		
31203	Layer seam proportion	1-100	10		
31204	Layer seam stitch length limit	0-5.0	4.0		
3.13 Other setting					
31301	Type selection		158		P70
31302	Trial period				

4. Integrated port diagram

14P function port description



1. Thread trimming electromagnet: 1 (DGND), 8(+32V)

2. Thread clamping / thread wiping electromagnet: 2, 9 (+32V)

3. Thread tension releasing electromagnet: 3, 10 (+32V)

4. LED Light: 4 (DGND), 11 (+5V)

5. Back-tacking key: 5 (signal)

6. Darning stitch key: 7 (signal)

7. 1/2 darning stitch key: 14 (signal)

8. 1/4 darning stitch key: 12 (signal)