GLOBAL

# WF 976

## CYLINDER BED TWIN NEEDLE, COMPOUND FEED LOCKSTITCH SEWING MACHINE

**OPERATION / INSTRUCTION / PARTS MANUAL**

# Content

## Operation Instruction



## Parts Manual

# Operation Instruction

## 1. Brief instruction

This series adopt slide take-up lever, vertical rotating hook which forms two lines of lockstitch seam.Upper shaft and lower shaft are driven by teeth-type synchronic belt, and adjusted by lever-type stitch length adjusting mechanism. This series are equiped with safety clutch mechanism to avoid the damage to machine when overloading occurs. The feed mechanism is designed with compound feed of timing feed between upper feed with alternating presser foot and lower feed with needle and feed dog.

This series are widely used in producing heavy weight materials such as bag, luggage, cushion, etc. They are suitable for sewing arc and cylinder type products.

## 2. Main specification

| TYPE | WF 976 |
|---|---|
| Application | Medium and heavy duty |
| Max.sewing speed | 2000spm |
| Stitch length | 0-6mm |
| Needle bar stroke | 33.2mm |
| Clearance under presser foot lift | 8.5mm by hand, 14mm by pedal |
| Rotating hook | Vertical |
| Needle | DP×17 18#-23# |
| Lubrication | Semi-automatic |
| Power | 370W |
| Needle guage | 1/8″ ,1/4″ ,5/16″ ,3/8″ ,1/2″ |

## 3. Installing the machine

1. Location of the machine

To ensure a smooth running, the machine should be located on rigid and flat floor. The insert of rubber mat between machine stand and floor is recommended for further reducing the runing noise and vibration.

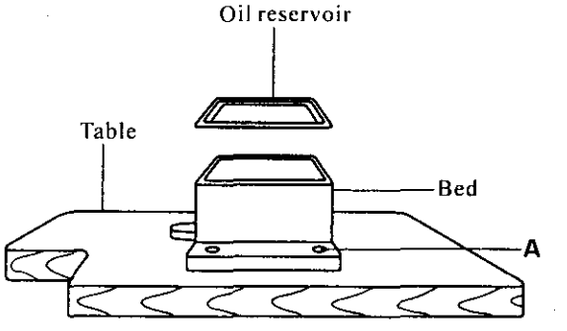
2. Oil reservoir installation (Fig.1)

Put the oil reservoir into the table cutout, and place the four cushions on the four corners of the cutout, then place oil felt into the oil reservoir.

3. Installing the machine head (Fig.2)

Install the hinge into the base of the machine, then move the machine head freely till it is seated on the frame of the table cutout, then tighten the screws A.

1

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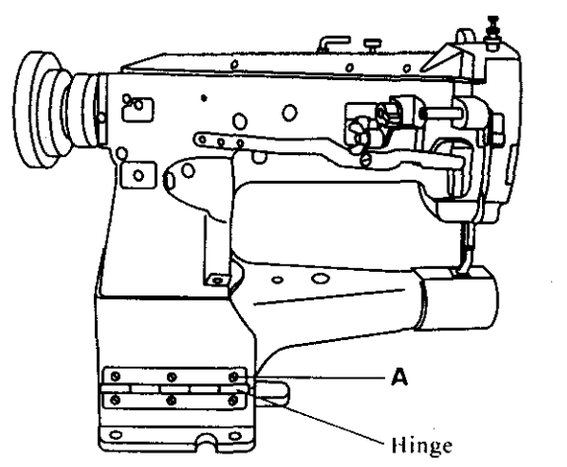

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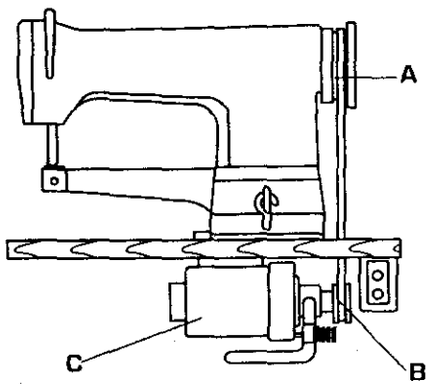


## 4. Installing the motor (Fig.3)

Move the motor C leftward and rightward until the balance wheel groove A is aligned with the belt groove B. Make sure that the belt does not touch the table.

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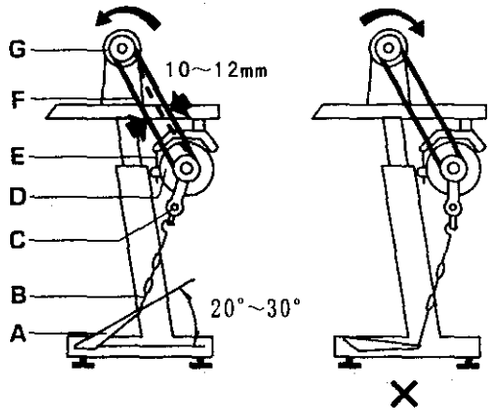


## 5. Connecting the clutch to the pedal (Fig.4)

1.The optimum tilt angle of pedal with floor is approx 20-30 degree.

2.Adjust the clutch E of the motor so that clutch lever C and draw bar B run in line.

3.The machine balance wheel shold rotate counter clockwise for normal sewing when view from opposite side of the balance wheel. The motor should rotate in the same direction. The rotation can be reversed by reversing (turn over 180 deg)the plug of the motor.

4.Adjust the tension of V-belt by moving the motor vertically. The proper tension of V-belt is a slack of 10-12mm when the belt is depressed (at the belt pan) by finger.

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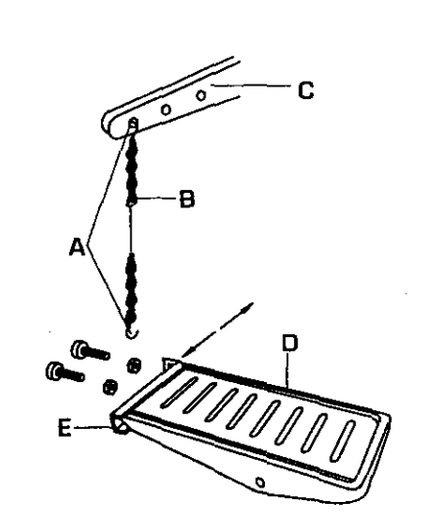


## 6. Installing the presser foot lift control plate (Fig.5)

Connect the draw bar hook A to the presser foot lift lever V, and install the pedal assembly D on the spring of the machine stand, then move the control plate E leftward and rightward until the chains run in line. Tighten the connector by bolt ad nut. Finally connect the control plate with the chain hook.

## 7. Installing the bobbin winder (Fig.6)

Align the pulley B with the outside of belt C, and there should be a certain clearance between them, so that pulley B could be in touch with belt after the stop latch thumb lever A is depressed, thereby belt drives the pulley B while machine is running. Make sure that the bobbin winder is in parallel with the belt slit E of table, then tighten it by two wood screws D.

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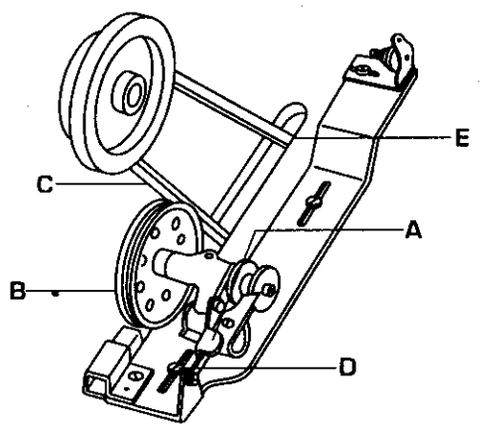


## 8. Installing the thread spool stand (Fog.7)

Locate the thread spool stand at the right front of the table. Make sure that the spool stand may not ob struct when the machine head is turned backward, then tighten the nut C.

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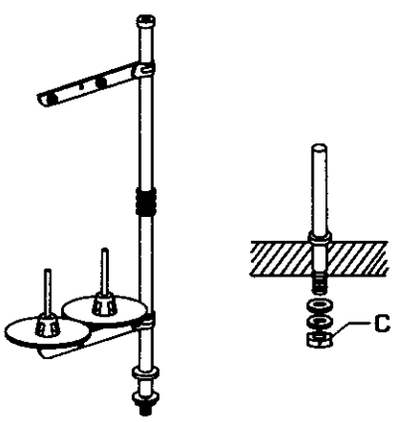



## 9. Operation preparation

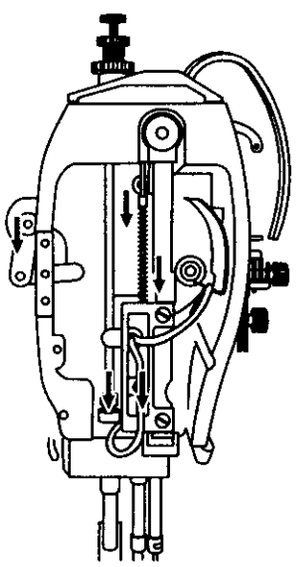
1.Cleaning the machine

Before delivery, the machine parts are coated with rust preventive grease, which may be hardened and contaminated by dust during storage and shipment. The grease must be removed by clean cloth with gasoline.

2.Examination

Though every machine has been confirmed by strict test and inspection before delivery, the machine parts may be loosed or deformed after long transportation with jolt. A thourough examination must be performed after clean the machine. Turn the machine balance wheel to check if there is running obstruction, parts collision, uneven resistance or abnmormal noise. If these exist, adjustment must be made accordingly before run.

8(1)



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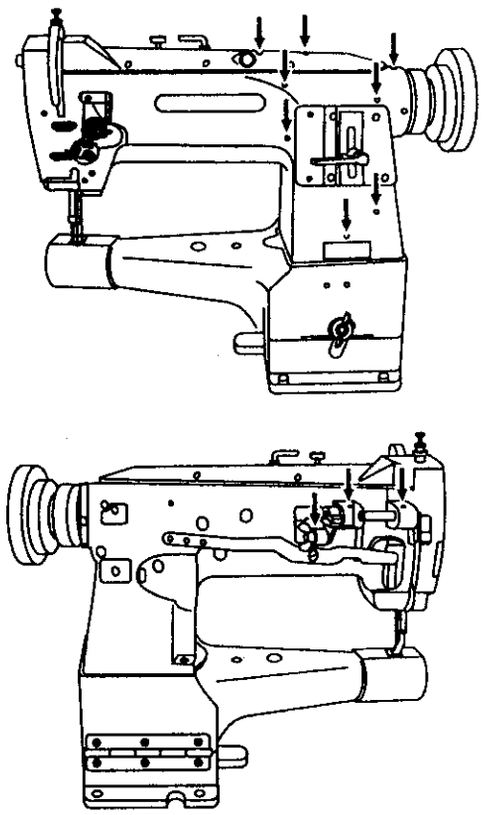

## 10. Lubrication (Fig.8)

Before delivry, amount oil must be filled into the position as arrows show in the Fig. If the machine is in constant use, the machine should be oiled not less twice for one running.

## 11. Trial run

When the machine starts for the intial time or reuse after a long period of time, lift the presser foot and run the machine at the speed of 1000-1500spm for about 30 minutes, then raise the speed gradually.

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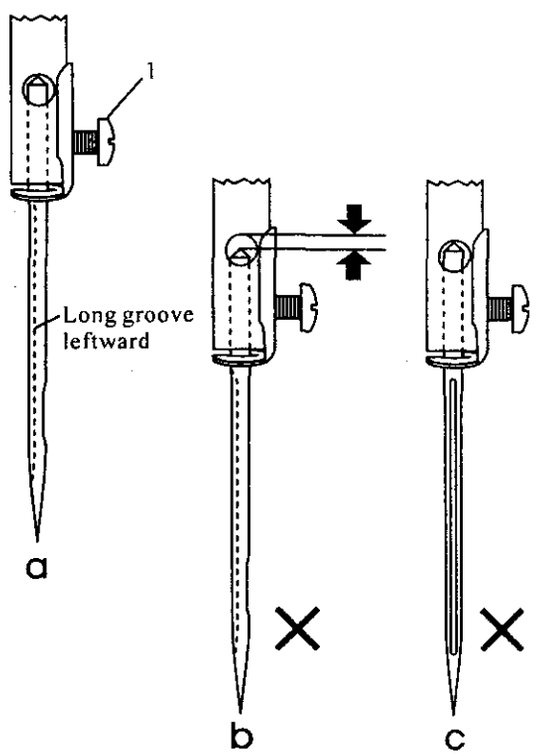


## 12. Installing the needle (Fig.9)

Turn the balance wheel to lift the needle bar to its highest position. Loosèn the needle set screw 1, make the long groove of the needle toward the left side of the operator, then fully insert the needle shank to the bottom of the needle socket. Then tighten the screw 1 to set the needle as Fig a.

Note: Fig.b : Insufficient insertion
Fig.c : Wrong insertion

## 13. Coordination among needle, thread and materials

The needle thread should be left-twisted. Hold the thread by left hand, twist it by right hand in the direction shown as Fig. If the thread becomes tight, it is left-twisted; on the contrary, it is right-twisted.

The coarseness of needle should be in accordance with the nature of materials. If stitch on heavy duty material with a slim needle, the needle will be easily bent, skipped or broken. On the contrary, if stitch on tight woven materials with a very coarse needle, the material will be destroyed with over-big needle hole. Therefore, the needle and thread should be properly selected.

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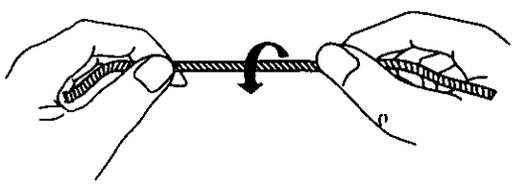

## 14. Threading the needle thread (Fig.11)

When threading the needle thread, the needle bar should be lifted to its highest position, lead the thread from the spool and pass it in the order instructed.

Threading order as shown in Fig: thread guide A-three-eye thread guide B-tension disc C-thread control plate D-thread take-up spring E-upper thread guide F-thread take-up lever G-upper thread guide Flower thread guide I-needle bar thread guide J-needle K

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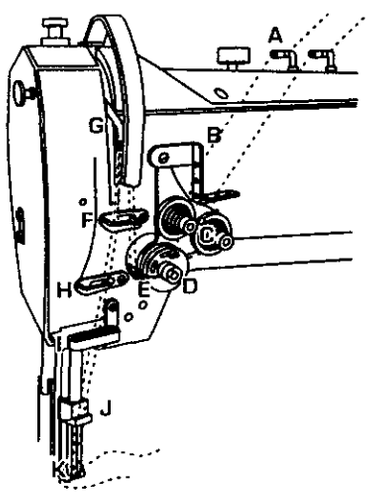


## 15. Adjusting the tension of bobbin thread and needle thread (Fig.12)

The tension of needle thread and bobbin thread should be properly adjusted. Normal stitch form should be as shown in Fig.12.1. If the tension disc is too tight or too loose, the abnormal stitch form occurs as shown in Fig.12.b,c.

1.Adjusting the tension of bobbin thread

The tension of bobbin thread could be adjusted according to the nature of material:

1)Turn the balance wheel by hand to lift the thread take-up lever to its highest position;

2)Remove the slide plate, then the adjusting screw A could be found in Fig;

3)Turn the screw A clockwise to increase the tension of bobbin thread;

4)If turn it counter clockwise, the tension of bobbin thread will be decreased.

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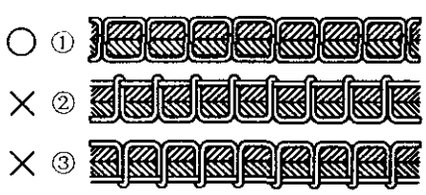
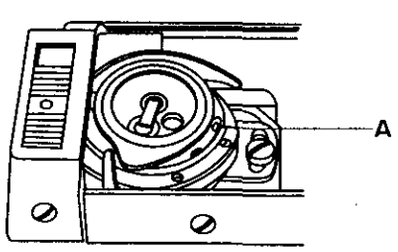
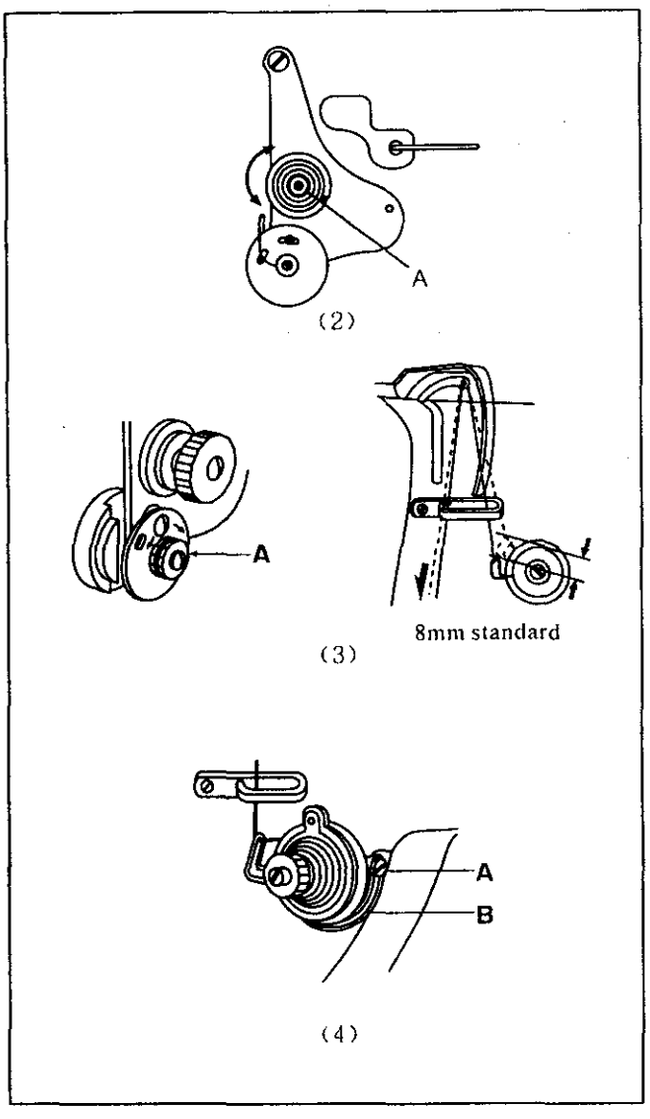





2.Adjusting the tension of needle thread

1)Adjusting the pressure of tension disc: as shown in Fig (2) Generally, the tension of needle thread is adjusted by adjusting the pressure of adjusting tension disc. Turn the nut A clockwise to increase the pressure of the tension disc, on the contrary, to decrease the pressure of tension disc.

2)Adjusting the tension of take-up spring:

| | |
|---|---|
| Light duty material | 20g |
| Common material | 25g |
| Heavy duty material | 30g |

Adjusting method: as shown in Fig(3):

Loosen the nut A, turn the thread take-up spring shaft counter clockwise to increase the tension, on the contrary, to decrease the tension. Insert the screw driver into the slit of the thread take-up spring shaft, turn it until the required tension is obtained.

3)The vibrating range of the thread take-up spring:

Thread take-up spring must be able to vibrate. When the thread take-up lever is lifted to its highest position, the vibrating range of it should be as follows:

| | |
|---|---|
| Light duty material | over 8mm |
| Common material | around 8mm |
| Heavy duty material | less than 8mm |

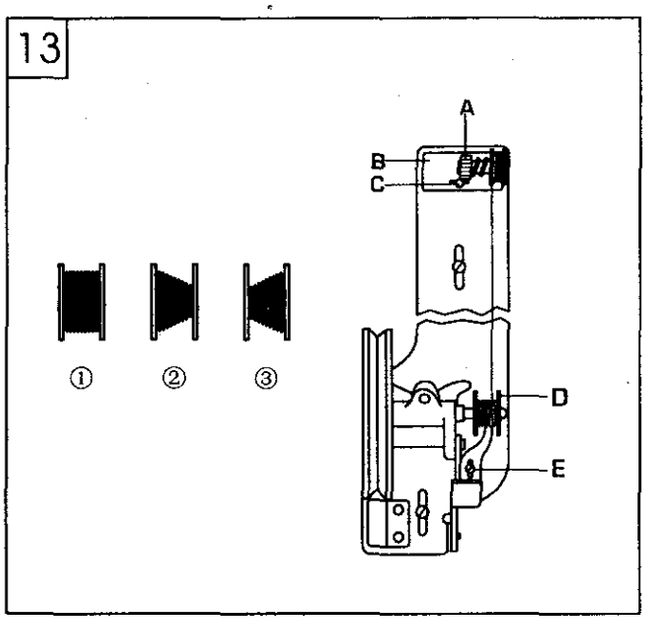
Adjusting method: as shown in Fig.(4)

a.Loosen the presser foot lever;

b.Loosen the position screw A;

c.Turn the position plate B counter clockwise to increase the vibrating range, on the contrary, to decrease the vibrating range;

d.Tighten the position screw A.




## 16. Winding adjustment(Fig.13)

The wound bobbin thread should be neat and tight. If not, adjust the thread tension by turning the tension stud thumb nut of the bobbin winder tension bracket A. If the wound bobbin is not neat, adjust it by moving the thread guide bracket B. When adjusting, loosen the screw C first, then move the bracket rightward if the thread is wound to one side as shown in Fig.13.(2); move the bracket leftward if the thread is wound to one side as shown in Fig.13.(3).

**Note:** Nylon or polyester thread should be wound with light tension. Otherwise the bobbin D might be deformed or broken.

The optimum capacity of thread will fill about 80% of the outside diameter of bobbin, and this can be adjusted by adjusting screw E.

## 17. Setting the stitch length and reverse sewing (Fig.14)

Stitch length could be adjusted by turning the stitch length regulating nut. When the scale on the stitch length adjusting position block is aligned with some figure on the stitch length dial plate, then the figure indicates the stitch length. Reverse sewing can be obtained when reverse feed lever is depressed and forward sewing can be restored automatically when reverse feed lever is released.

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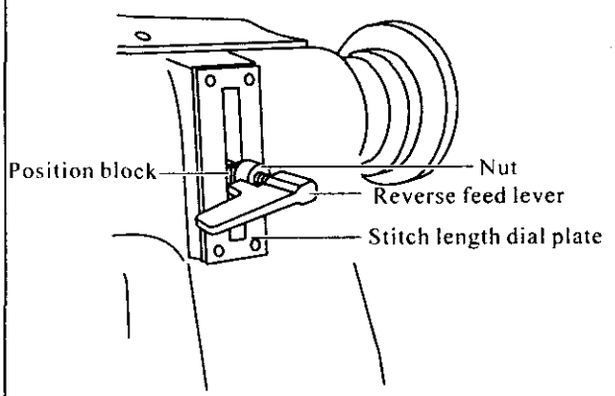


## 18. Adjusting the pressure of presser foot (Fig.15)

Pressure on presser foot is to be adjusted in accordance with materials to be sewn. If heavy materials to be sewn, turn the pressure regulating screw clockwise as shown in Fing.15 to increase the pressure. While light materials to be sewn, turn the pressure regulating screw counter clockwise to decrease the pressure.

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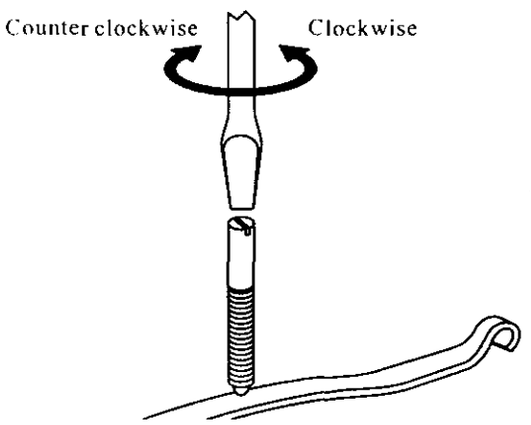


## 19. Function of the safety clutch (Fig.16)

When the thread is twisted into the rotating hook because of abnormal operation, the spring plate on the clutch will automatically get off the bushing of belt wheel shaft. Turn the eccentric pin to adjust the load on the clutch.

When the arrow of the eccentric pin is aligned with the center of the lower shaft, it indicates the weakest power on the clutch; when the arrow is toward the outside, the power is stronger. When the safety clutch swtichs off, turn the balance wheel clockwise by right hand, when the stop plate stops the wheel, turn the balance wheel to make it switch on again, then loosen the button.

When the clutch switchs off, the synchronic belt should be re-installed. First, turn the balance wheel counter clockwise to lift the thread take-up lever to its highest position, meanwhile, the red arrow on the synchronic belt wheel should be aligned with the arrow on the position plate. Then install the synchronic belt.

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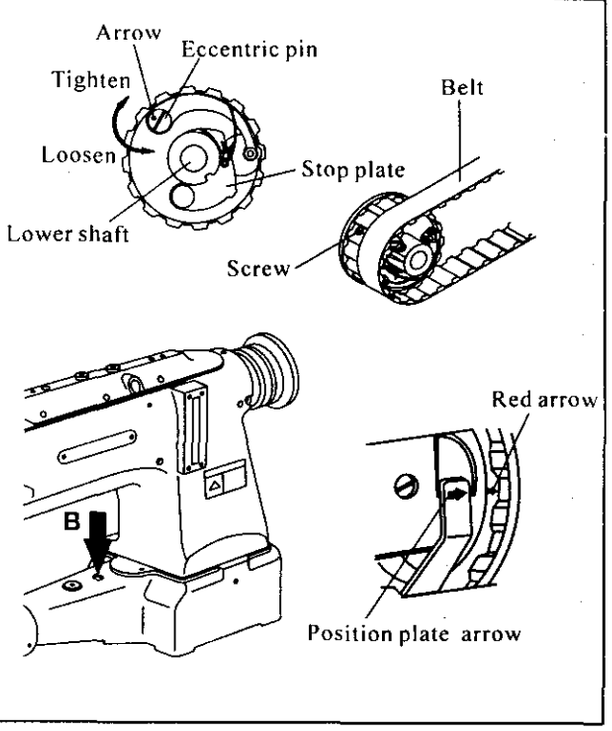

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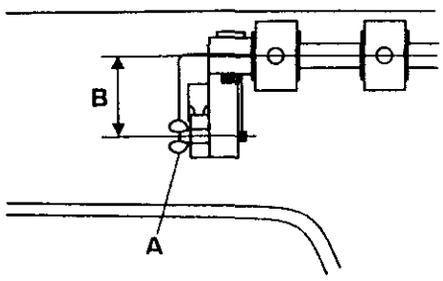


## 20. Adjusting the lift amount of presser foot with walking presser foot (Fig.17)

The lift amount of walking presser foot together with presser foot can be adjusted as follows:

Loosen the wing nut A and adjust its center distance B between wing nut A and the presser foot lift shaft. Shorten the center distance B to increase the lift amount; widen the center distance B to decrease the lift amount. After adjustment, tighten the screw, turn the balance wheel slowly to check if there is parts collision.

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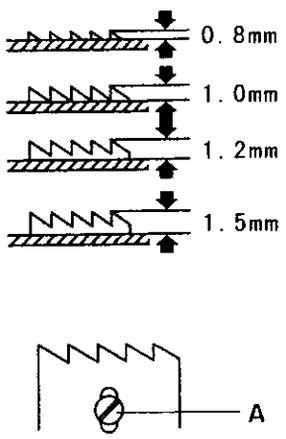


## 21. Adjusting the position of the feed dog (Fig.18)

When the feed dog is raised to its highest position, the height from the teeth point to the surface of needle plate should be in accordance with the materials. When sewing heavy duty materials such as leather, the height should be about 1.2mm. when sewing light duty materials, the height should be about 0.8mm. when sewing common materials, the height should be about 1mm, when sewing extra heavy duty materials, the height should be about 1.5mm. when adjusting the position of feed dog, first loosen the feed dog screw A, and move it vertically to reach its required height, then tighten the screw.

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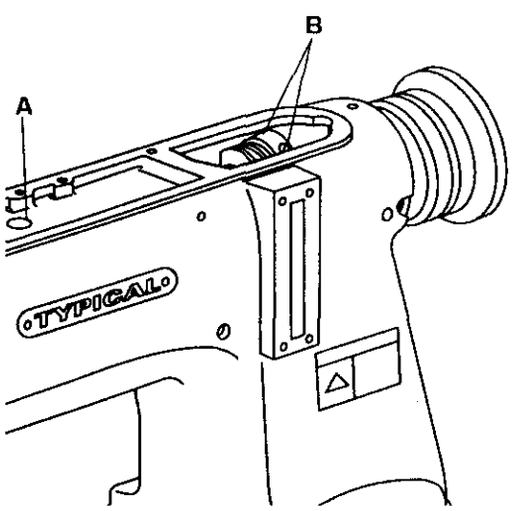



## 22. Timing feed adjustment (Fig.19)

1.Standard position

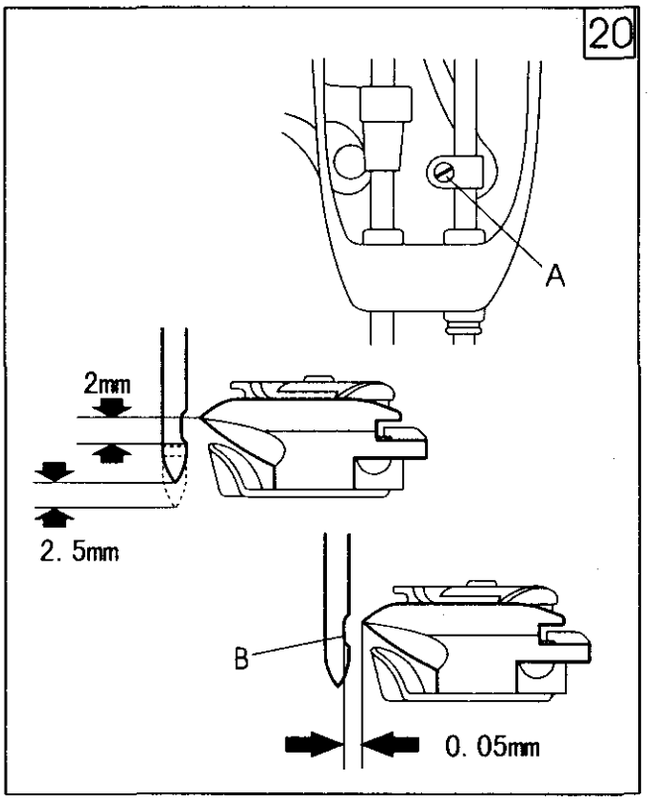
When the feed dog is just above the surface of needle plate and begin feeding, the needle should move downward, close to the surface of needle plate and is aligned with the needle hole on the feed dog body. Adjustment can be adjusted by adjusting the position of feed dog cam and vibrating shaft crank.

2.Installing the feed dog

First, adjust the stitch length to 0, open the upper cover, turn the balance wheel counter clockwise by right hand, the front oil A hole on upper shaft is the basic point, when the A is vertically upward, feed dog two screws B are symmetrical.

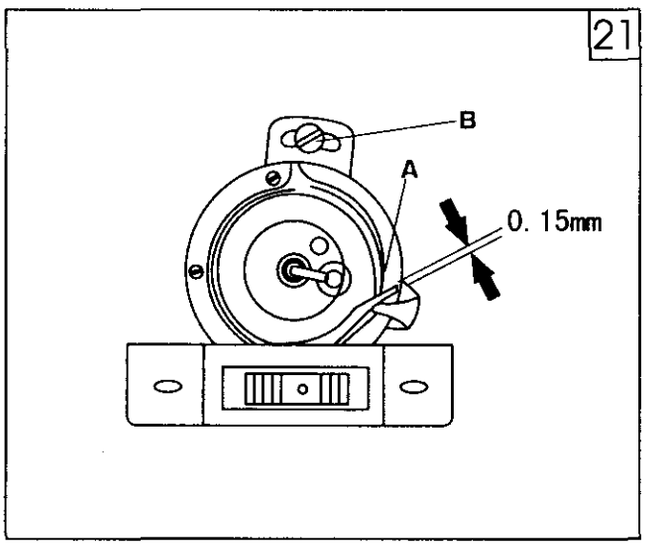
## 23. Adjusting the timing between needle and rotating hook (Fig.20)

Turn the balance wheel to lower the needle bar to its lowest position. Then when the needle is lifted 2.5mm from its lowest position, hook point should be coincided with the center line of the needle. The clearance between hook point and upper end of needle hole is approx 2mm. If it is not, loosen the screw A, move the needle bar vertically to its required position, then tighten the screw A. when adjusting, note that the side clearance between hook point and needle should be 0-0.05mm.



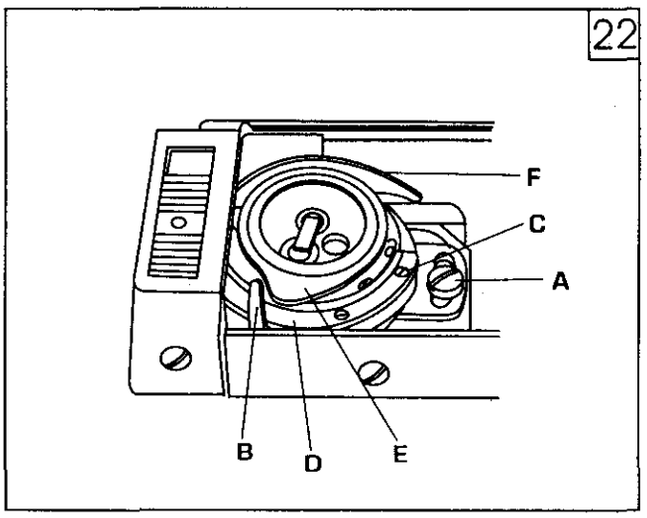

## 24. Relationship between the rotating hook and hook separator (Fig.20)

1.Remove the slide plate;
2.Turn the balance wheel and stop when the biggest distance between the hook separator and rotating hook A is obtained;
3.Loosen the adjusting screw B so that the clearance between separator and rotating hook is 0.15mm. (Adjust in accordance with the thickness of materials);
4.After adjustment, tighten the adjusting screw B.



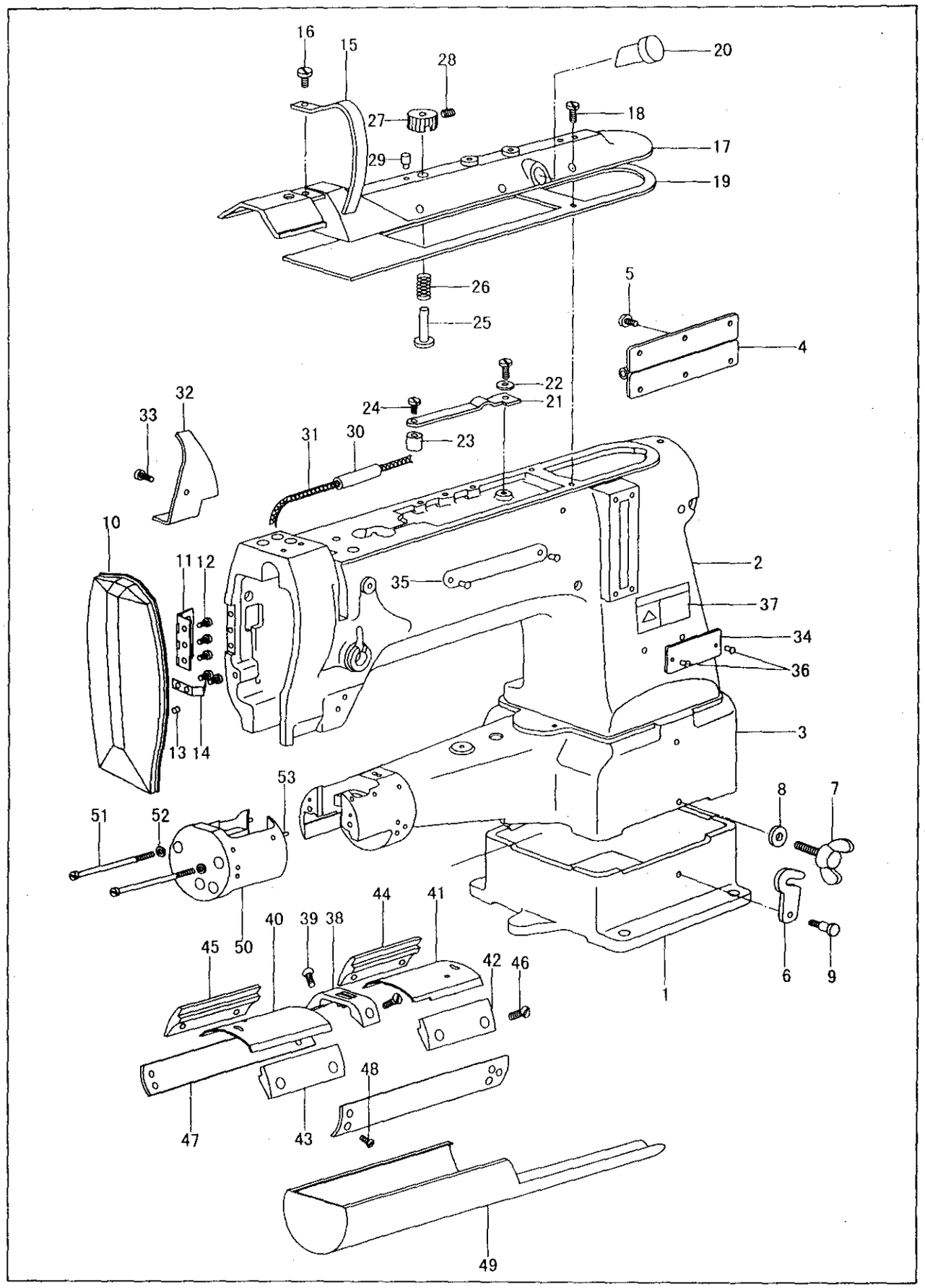

## 25. Removing and installing the rotating hook (Fig.22)

If the rotating hook is damaged during sewing, replace it as follows:
1.Lift the needle bar to its highest position and remove the needle;
2.Remove the slide plate, needle plate, front and rear presser plate and bobbin;
3.Release the adjusting screw A, remove the separator B;
4.Release the screw C and remove the presser plate D;
5.Turn the hook base E slightly and take it out;
6.Release the screw and take out the hook body F.
Installing the rotaing hook:
1.Install the rotating hook in the reverse process above;
2.Note that installing direction is the same with removing direction.



# Parts Manual

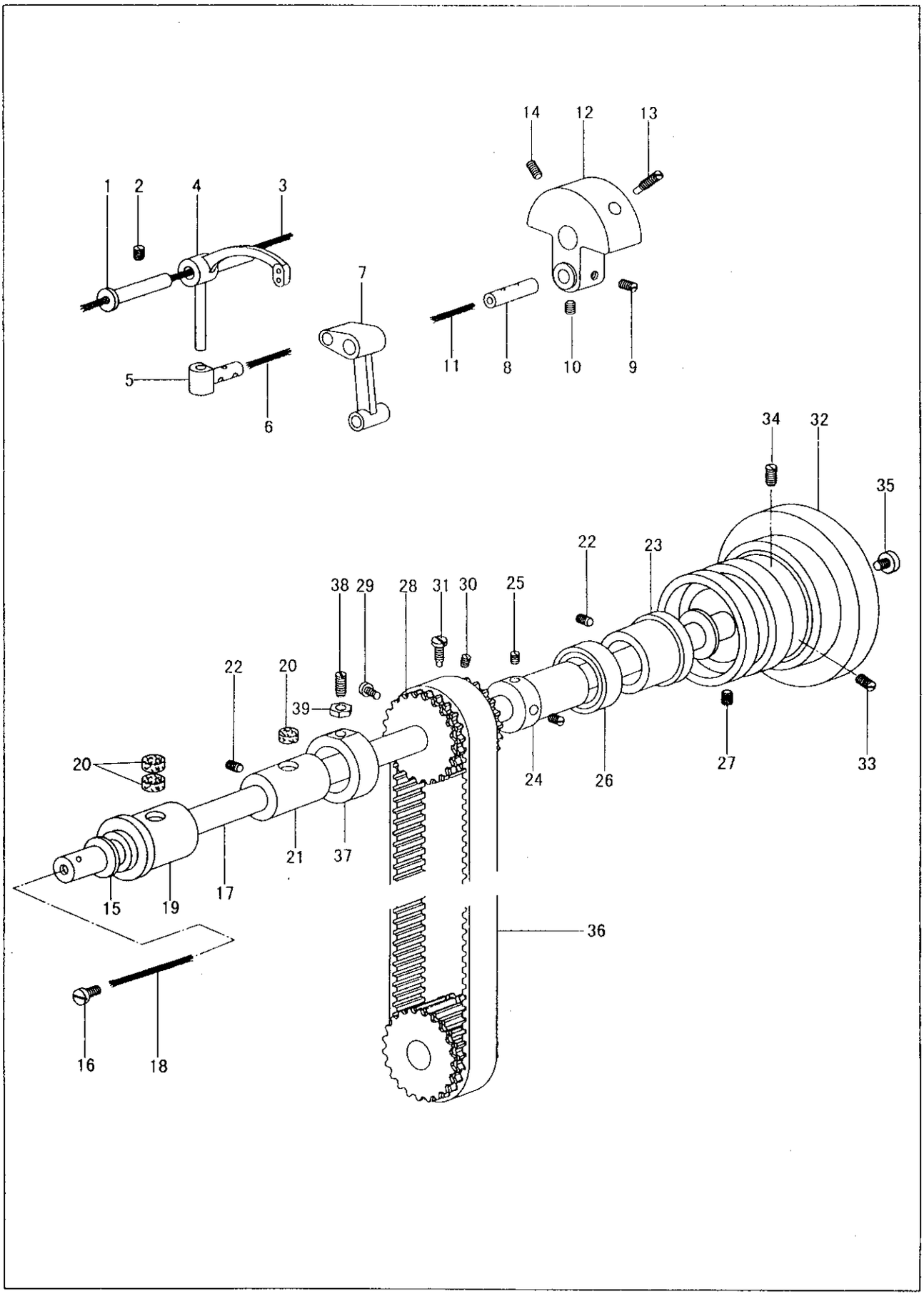
## 1. Arm and bed



## 1. Arm and bed

| No. | Part number | Name | Qt. | Remark |
|---|---|---|---|---|
| 1 | 91WF2-001 | Cylinder bed | 1 | |
| 2 | 91WF2-002 | Arm | 1 | |
| 3 | 22WF2-003 | Base | 1 | |
| 4 | 37T4-407 | Hinge | 1 | |
| 5 | 22WF2-004 | Screw | 6 | |
| 6 | 37T4-409 | Connecting hook | 1 | |
| 7 | 22WF2-006 | Connecting hook screw assembly | 1 | |
| 8 | 37T4-411 | Washer | 1 | |
| 9 | 22WF2-020 | Screw | 1 | |
| 10 | 91WF2-003 | Face plate | 1 | |
| 11 | 89WF2-006 | Face plate hinge assembly | 1 | |
| 12 | 89WF2-005 | Hinge screw | 8 | |
| 13 | 49WF1-006 | Rubber plug | 1 | |
| 14 | 89WF2-004 | Spring plate | 1 | |
| 15 | 91WF2-004 | Safety guard | 1 | |
| 16 | 49WF2-009 | Screw | 2 | |
| 17 | 91WF2-005 | Upper cover | 1 | |
| 18 | 49WF2-012 | Screw | 8 | |
| 19 | 49WF2-013 | Seal gasket | 1 | |
| 20 | 49WF2-014 | Oil window | 1 | |
| 21 | 49WF2-015 | Spring | 1 | |
| 22 | 7KT2-020 | Washer | 1 | |
| 23 | 49WF2-016 | Column | 1 | |
| 24 | 13WF6-008 | Screw | 1 | |
| 25 | 49WF2-017 | Pin | 1 | |
| 26 | 49WF2-018 | Spring | 1 | |
| 27 | 49WF2-019 | Column | 1 | |
| 28 | 17T5-016 | Screw | 1 | |
| 29 | 49WF2-020 | Pin | 1 | |
| 30 | 49WF2-021 | Oil tube | 1 | |
| 31 | | Oil wick | 1 | |
| 32 | 16WF2-038 | Oil retainer | 1 | |
| 33 | 16WF2-059 | Screw | 1 | |
| 34 | 90WF2-005 | Trade mark | | |
| | 91WF2-006 | Trade mark | 1 | |
| 35 | 16WF2-053 | Trade mark | 1 | |
| 36 | | Rivet | 4 | |
| 37 | 1KT1-005 | Trade mark | 1 | |
| 38 | | | | |
| | 91WF2-007 | Needle plate | 1 | |
| 39 | 91WF2-008 | Screw | 2 | 11/64″×32 |
| 40 | 91WF2-009 | Slide plate assembly(L) | 1 | |
| 41 | 91WF2-010 | Slide plate assembly□ | 1 | |
| 42 | 91WF2-011 | Right presser plate (long) | 1 | |
| 43 | 91WF2-012 | Left presser plate (short) | 1 | |
| 44 | 91WF2-013 | Right presser foot (long) | 1 | |
| 45 | 91WF2-014 | Left presser foot (short) | 1 | |
| 46 | 22WF2-007 | Screw | 8 | 9/64″×40 |
| 47 | 91WF2-015 | Connecting presser plate | 2 | |
| 48 | 16WF2-035 | Screw | 10 | 11/64″×40 |
| 49 | 91WF2-016 | Safety ring | 1 | |
| 50 | 91WF2-017 | Connecting holder | 1 | |
| 51 | 91WF2-018 | Screw | 2 | |
| 52 | | Washer | 2 | |
| 53 | 22WF2-018 | Connecting pin | 2 | |

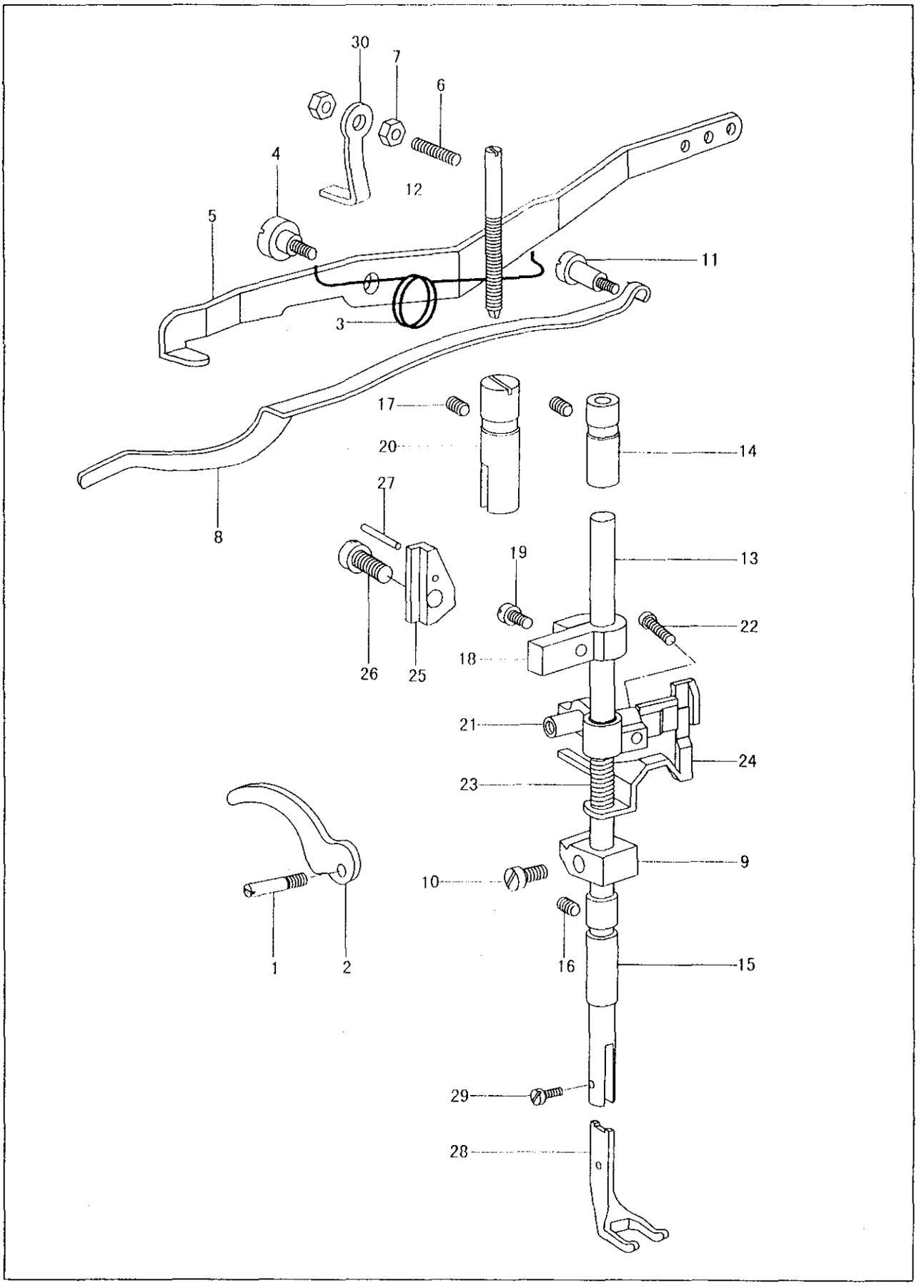
## 2. Upper shaft and thread take-up parts



## 2. Upper shaft and thread take-up parts

| No. | Part number | Name | Qt. | Remark |
|---|---|---|---|---|
| 1 | 49WF1-003 | Thread take-up lever pin shaft | 1 | |
| 2 | 49WF1-004 | Screw | 1 | |
| 3 | | Oil wick | 1 | |
| 4 | 91WF1-002 | Thread take-up lever | 1 | |
| 5 | 215029 | Slide blcok | 1 | |
| 6 | | Oil wick | 1 | |
| 7 | 16WF1-014 | Needle bar link | 1 | |
| 8 | 16WF1-015 | Needle bar crank pin | 1 | |
| 9 | 16WF1-016 | Position screw | 1 | |
| 10 | 16WF1-017 | Screw | 1 | |
| 11 | | Oil wick | 1 | |
| 12 | 16WF1-018 | Needle bar crank | 1 | |
| 13 | 16WF1-019 | Position screw | 1 | |
| 14 | 16WF1-020 | Screw | 1 | |
| 15 | 16WF1-021 | Spacer | 1 | |
| 16 | 16WF1-022 | Screw | 1 | |
| 17 | 22WF1-005 | Upper shaft | 1 | |
| 18 | | Oil wick | 1 | |
| 19 | 103565 | Front bushing | 1 | |
| 20 | 16WF1-025 | Oil felt | 3 | |
| 21 | 22WF1-006 | Middle bushing | 1 | |
| 22 | 16WF1-004 | Screw | 2 | |
| 23 | 16WF1-026 | Rear bushing | 1 | |
| 24 | 22WF1-047 | Rear bushing gasket | 1 | |
| 25 | 22WF1-048 | Screw | 2 | |
| 26 | | Rear bushing bearing | 1 | |
| 27 | 16WF1-029 | Retaining ring | 1 | |
| 28 | 22WF1-043 | Synchronic belt wheel | 1 | |
| 29 | 22WF1-044 | Screw | 1 | |
| 30 | 22WF1-045 | Screw (short) | 1 | |
| 31 | 22WF1-046 | Screw (long) | 1 | |
| 32 | 037473 | Balance wheel | 1 | |
| 33 | 13WF1-077 | Screw | 1 | |
| 34 | 13WF1-078 | Screw | 1 | |
| 35 | 16WF1-040 | Screw | 1 | |
| 36 | 91WF1-017 | Synchronic belt | 1 | |
| 37 | 22WF1-041 | Middle bushing gasket | 1 | |
| 38 | 16WF1-019 | Screw | 1 | |
| 39 | 22WF1-042 | Nut | 1 | |

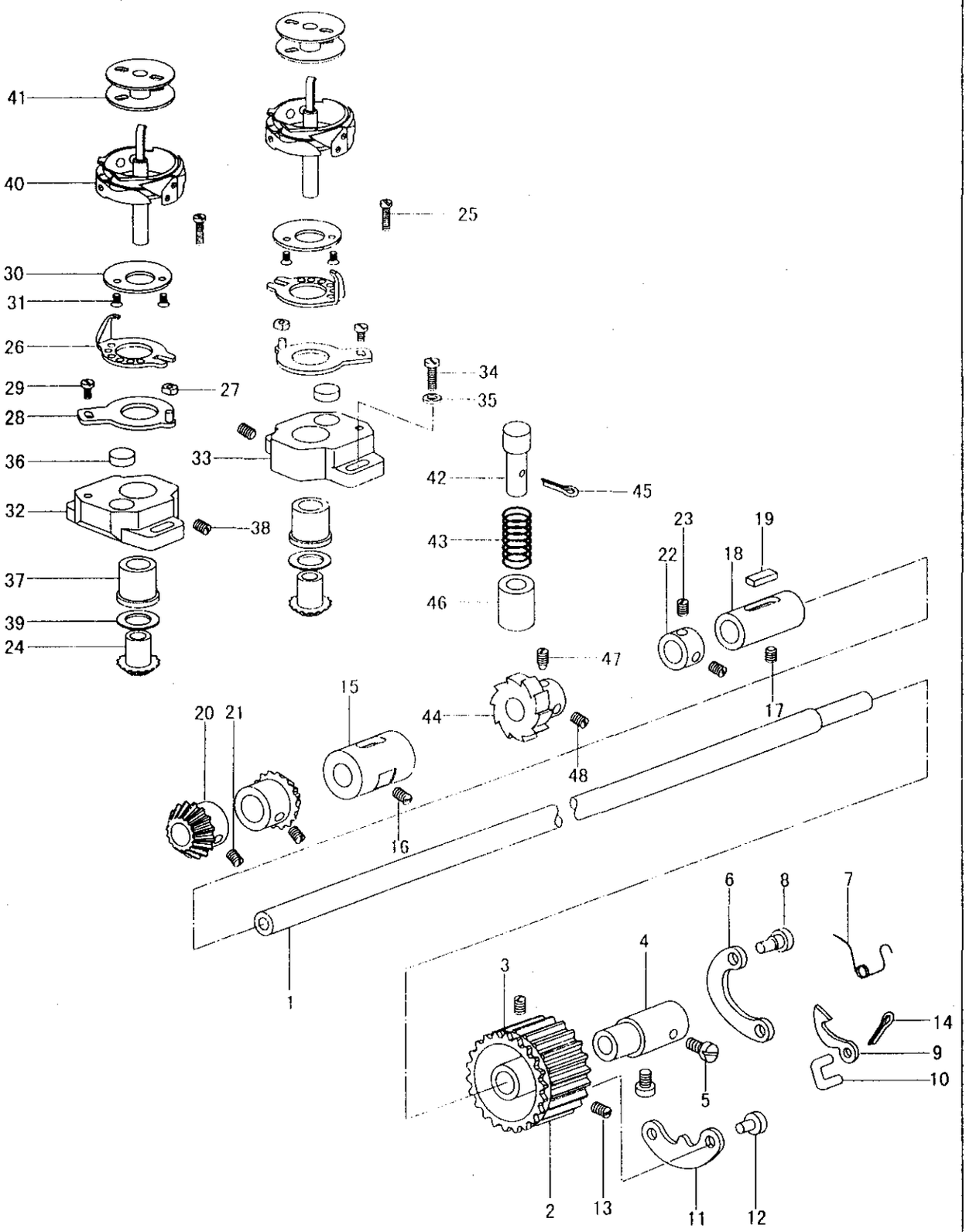
## 3. Presser bar and draw bar parts



## 3. Presser bar and draw bar parts

| No. | Part number | Name | Qt. | Remark |
|---|---|---|---|---|
| 1 | 16WF4-001 | Presser foot lift lever shaft | 1 | |
| 2 | 16WF4-002 | Presser foot lift lever | 1 | |
| 3 | 22WF3-001 | Spring | 1 | |
| 4 | 16WF3-059 | Screw | 1 | |
| 5 | 22WF3-002 | Presser foot lift bar | 1 | |
| 6 | 22WF3-003 | Screw | 1 | |
| 7 | 22WF3-004 | Nut | 2 | |
| 8 | 16WF4-009 | Spring | 1 | |
| 9 | 16WF4-023 | Spring bracket | 1 | |
| 10 | 16WF1-009 | Screw | 1 | |
| 11 | 16WF4-008 | Screw | 1 | |
| 12 | 037522 | Screw | 1 | |
| 13 | 22WF3-005 | Presser bar | 1 | |
| 14 | 16WF4-027 | Presser bar upper bushing | 1 | |
| 15 | 22WF3-006 | Presser bar lower bushing | 1 | |
| 16 | 16WF3-025 | Screw | 2 | |
| 17 | 16WF3-025 | Screw | 1 | |
| 18 | 16WF4-021 | Guide bracket | 1 | |
| 19 | 16WF4-022 | Screw | 1 | |
| 20 | 16WF4-020 | Guide shaft | 1 | |
| 21 | 22WF3-007 | Guide bracket | 1 | |
| 22 | 16WF2-033 | Screw | 1 | |
| 23 | 22WF3-008 | Spring | 1 | |
| 24 | 22WF3-009 | Presser foot lift releasing plate | 1 | |
| 25 | 22WF3-010 | Presser plate | 1 | |
| 26 | 22WF3-011 | Screw | 1 | |
| 27 | 22WF3-012 | Presser plate pin | 1 | |
| 28 | 22WF3-013 | Preser foot | 1 | |
| 29 | 22WF3-014 | Screw | 1 | |
| 30 | 22WF3-015 | Position plate | 1 | |

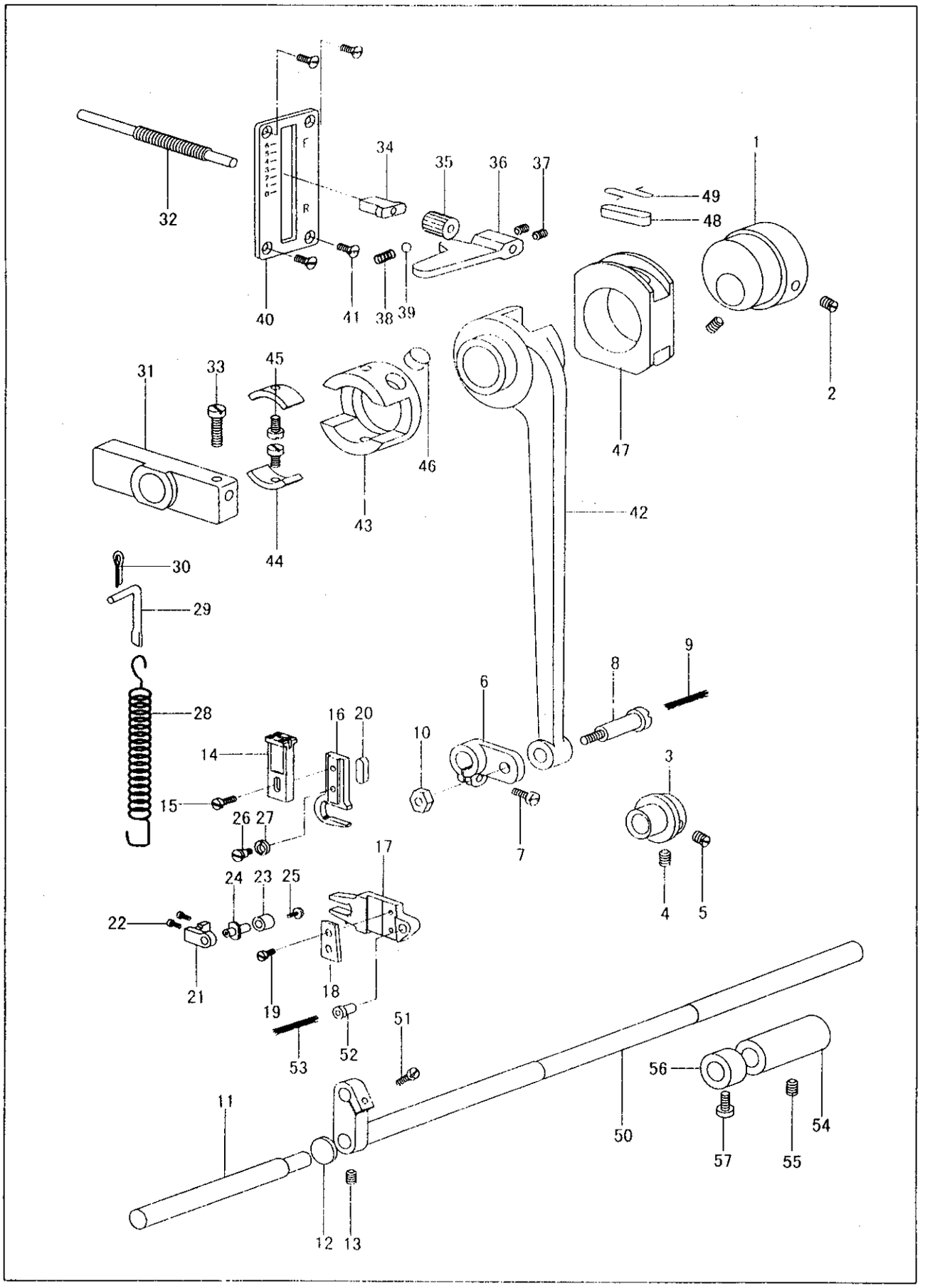
## 4. Lower shaft and rotating hook parts



## 4. Lower shaft and rotating hook parts

| No. | Part number | Name | Qt | Remark |
|---|---|---|---|---|
| 1 | 90WF1-002 | Lower shaft | | |
| | 91WF1-003 | Lower shaft | 1 | |
| 2 | 22WF1-010 | Synchronic belt wheel | 1 | |
| 3 | 16WF1-043 | Retainer | 3 | |
| 4 | 22WF1-011 | Bushing | 1 | |
| 5 | 22WF1-012 | Screw | 2 | |
| 6 | 22WF1-013 | Spring plate | 1 | |
| 7 | 22WF1-014 | Spring | 1 | |
| 8 | 22WF1-015 | Eccentric shaft pin | 1 | |
| 9 | 22WF1-016 | Stop plate | 1 | |
| 10 | 22WF1-017 | Connecting piece | 1 | |
| 11 | 22WF1-018 | Stop plate | 1 | |
| 12 | 22WF1-019 | Pin | 1 | |
| 13 | 22WF1-020 | Screw | 2 | |
| 14 | | Split pin | 1 | |
| 15 | 91WF1-004 | Front bushing | 1 | |
| 16 | 22WF1-022 | Screw | 1 | |
| 17 | 380637 | Screw | 1 | 1/4×32 |
| 18 | 22WF4-046 | Rear bushing | 1 | |
| 19 | | Oil felt | 1 | |
| 20 | 91WF1-005 | Lower shaft gear | | |
| | | Lower shaft gear | 2 | |
| 21 | 21WF1-043 | Screw | | |
| | | Collar | 4 | |
| 22 | 91WF1-006 | Screw | 1 | |
| 23 | 22WF4-005 | Gear | 2 | |
| 24 | 91WF1-007 | Gear | | |
| | | Screw | 2 | |
| 25 | 50WF1-046 | Screw | | |
| | | Rotating hook separator | 2 | |
| 26 | 91WF1-008 | Rotating hook separator | | |
| | | Slide block | 2 | |
| 27 | 91WF1-009 | Slide block | | |
| | | Set plate assembly | 2 | |
| 28 | 91WF1-010 | Set plate assembly | | |
| | | Adjusting screw | 2 | |
| 29 | 16WF1-059 | Adjusting screw | | |
| | | Eccentric plate | 2 | |
| 30 | 91WF1-011 | Eccentric plate | | |
| | | Screw | 2 | |
| 31 | 91WF1-012 | Screw | | |
| | | Rotating hook bracket (left) | 4 | |
| 32 | 91WF1-013 | Rotating hook bracket (right) | 1 | |
| 33 | 91WF1-018 | Screw | 1 | |
| 34 | 22WF1-050 | Screw | | |
| | | Washer | 4 | |
| 35 | 22WF1-036 | Washer | | |
| | | Oil felt | 4 | |
| 36 | 22WF1-037 | Oil felt | | |
| | | Rotating hook bracket bushing | 2 | |
| 37 | 91WF1-014 | Rotating hook bracket bushing | | |
| | | Screw | 2 | |
| 38 | 91WF1-020 | Screw | | |
| | | Washer | 2 | |
| 39 | 91WF1-015 | Washer | | KRT8-BL |
| | | Rotating hook | 2 | |
| 40 | 91WF1-016 | Rotating hook | | |
| | | Bobbin | 2 | |
| 41 | 88WF2-012 | Bobbin | | |
| | | Button | 2 | |
| 42 | 91WF1-019 | Spring | 1 | |
| 43 | 16WF3-046 | Stop wheel | 1 | |
| 44 | 22WF1-039 | Split pin | 1 | |
| 45 | | Button bushing | 1 | |
| 46 | 22WF1-040 | Screw | 1 | |
| 47 | 16WF1-054 | Screw | 1 | |
| 48 | 16WF1-053 | | 1 | |

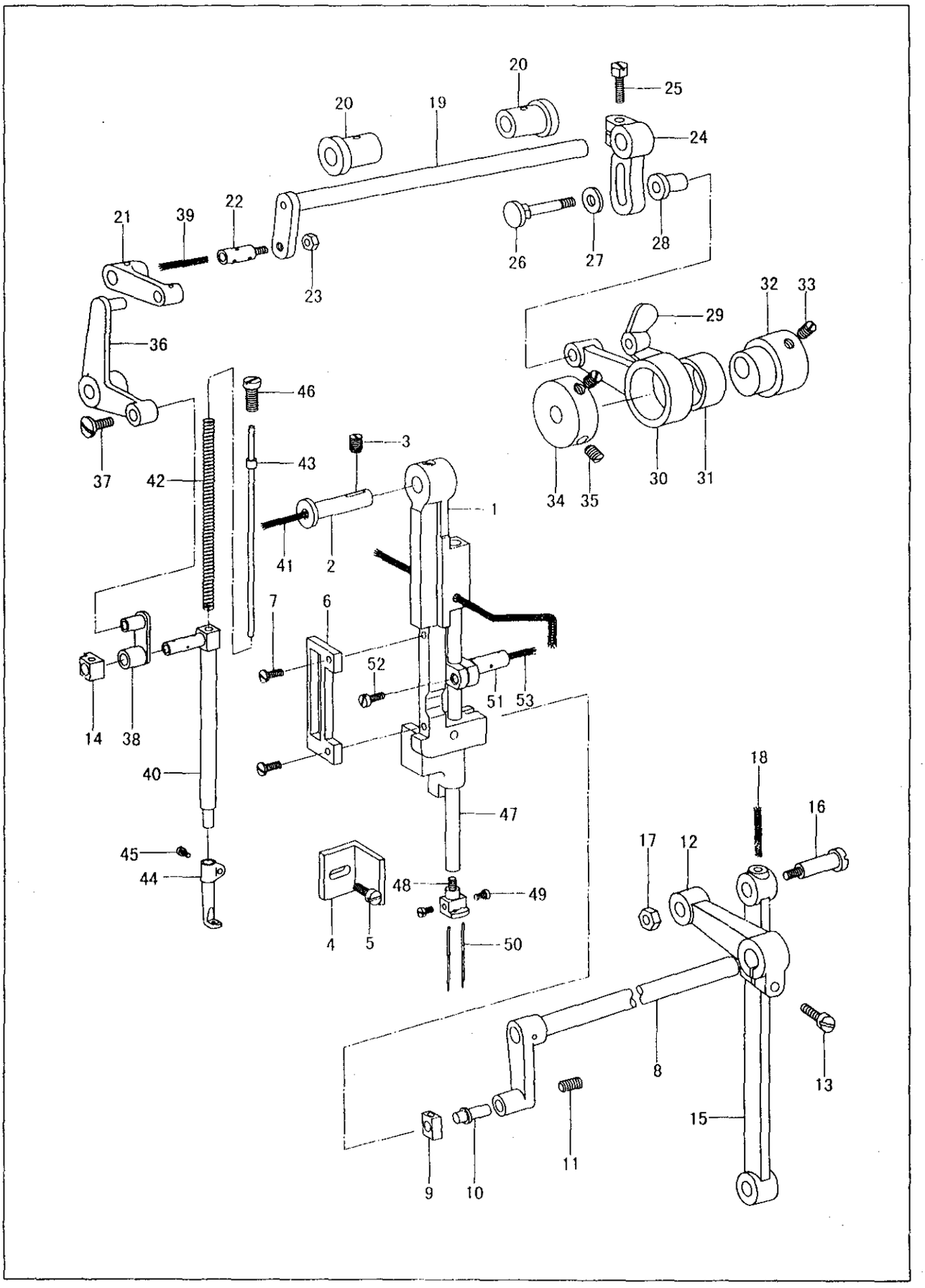
## 5. Feed shaft parts



## 5. Feed shaft parts

| No. | Part number | Name | Qt. | Remark |
|---|---|---|---|---|
| 1 | 22WF4-001 | Feed eccentric wheel | 1 | |
| 2 | 22WF4-002 | Screw | 2 | |
| 3 | 91WF4-001 | Cam | 1 | |
| 4 | 22WF4-004 | Screw | 1 | |
| 5 | 22WF4-005 | Screw | 1 | |
| 6 | 22WF4-006 | Feed crank | 1 | |
| 7 | 22WF4-007 | Screw | 2 | |
| 8 | 22WF4-008 | Screw | 1 | |
| 9 | | Oil wick | 1 | |
| 10 | 22WF4-009 | Connecting nut | 1 | |
| 11 | 91WF4-002 | Feed connecting shaft | 1 | |
| 12 | 22WF4-012 | Oil felt | 1 | |
| 13 | 16WF2-025 | Screw | 1 | |
| 14 | | | | |
| | 91WF4-003 | Feed dog | 1 | |
| 15 | 16WF2-020 | Screw | 1 | |
| 16 | 91WF4-004A1 | Feed dog support | 1 | |
| 17 | 91WF4-004A2 | Feed dog support bracket | 1 | |
| 18 | 91WF4-004A3 | Presser plate | 1 | |
| 19 | 16WF1-059 | Screw | 2 | |
| 20 | | Oil felt | 1 | |
| 21 | 91WF4-005 | Connecting bracket | 1 | |
| 22 | 91WF4-006 | Screw | 2 | |
| 23 | 91WF4-007 | Column | 1 | |
| 24 | 91WF4-008 | Column pin | 1 | |
| 25 | 91WF4-009 | Screw | 1 | |
| 26 | 91WF4-010 | Screw | 1 | |
| 27 | 91WF4-011 | Washer | 1 | |
| 28 | 22WF4-021 | Spring | 1 | |
| 29 | 22WF4-022 | Spring hook | 1 | |
| 30 | | Split pin | 1 | |
| 31 | 22WF4-023 | Control block | 1 | |
| 32 | 91WF4-012 | Bolt | 1 | |
| 33 | 22WF4-025 | Screw | 1 | |
| 34 | 22WF4-026 | Position block | 1 | |
| 35 | 22WF4-027 | Nut | 1 | |
| 36 | 22WF4-028 | Reverse feed lever | 1 | |
| 37 | 13WF4-027 | Screw | 2 | |
| 38 | 22WF4-030 | Spring | 1 | |
| 39 | | Spring ball | 1 | |
| 40 | 91WF4-013 | Stitch length dial | 1 | |
| 41 | 22WF4-032 | Screw | 4 | |
| 42 | 91WF4-014 | Feed link | 1 | |
| 43 | 22WF4-034 | Stitch length adjusting block | 1 | |
| 44 | 22WF4-035 | Oil felt | 2 | |
| 45 | 22WF4-036 | Screw | 2 | |
| 46 | 22WF4-037 | Felt | 1 | |
| 47 | 22WF4-038 | Slide block | 1 | |
| 48 | 22WF4-039 | Oil felt | 1 | |
| 49 | 22WF4-040 | Spring | 1 | |
| 50 | 91WF4-015 | Feed shaft | 1 | |
| 51 | 22WF4-020 | Screw | 1 | |
| 52 | 22WF4-042 | Connecting pin | 1 | |
| 53 | | Oil wick | 1 | |
| 54 | 22WF1-023 | Feed shaft bushing | 1 | |
| 55 | J0. 0. 81 | Screw | 1 | |
| 56 | 91WF1-006 | Collar | 1 | |
| 57 | 22WF4-005 | Screw | 1 | |

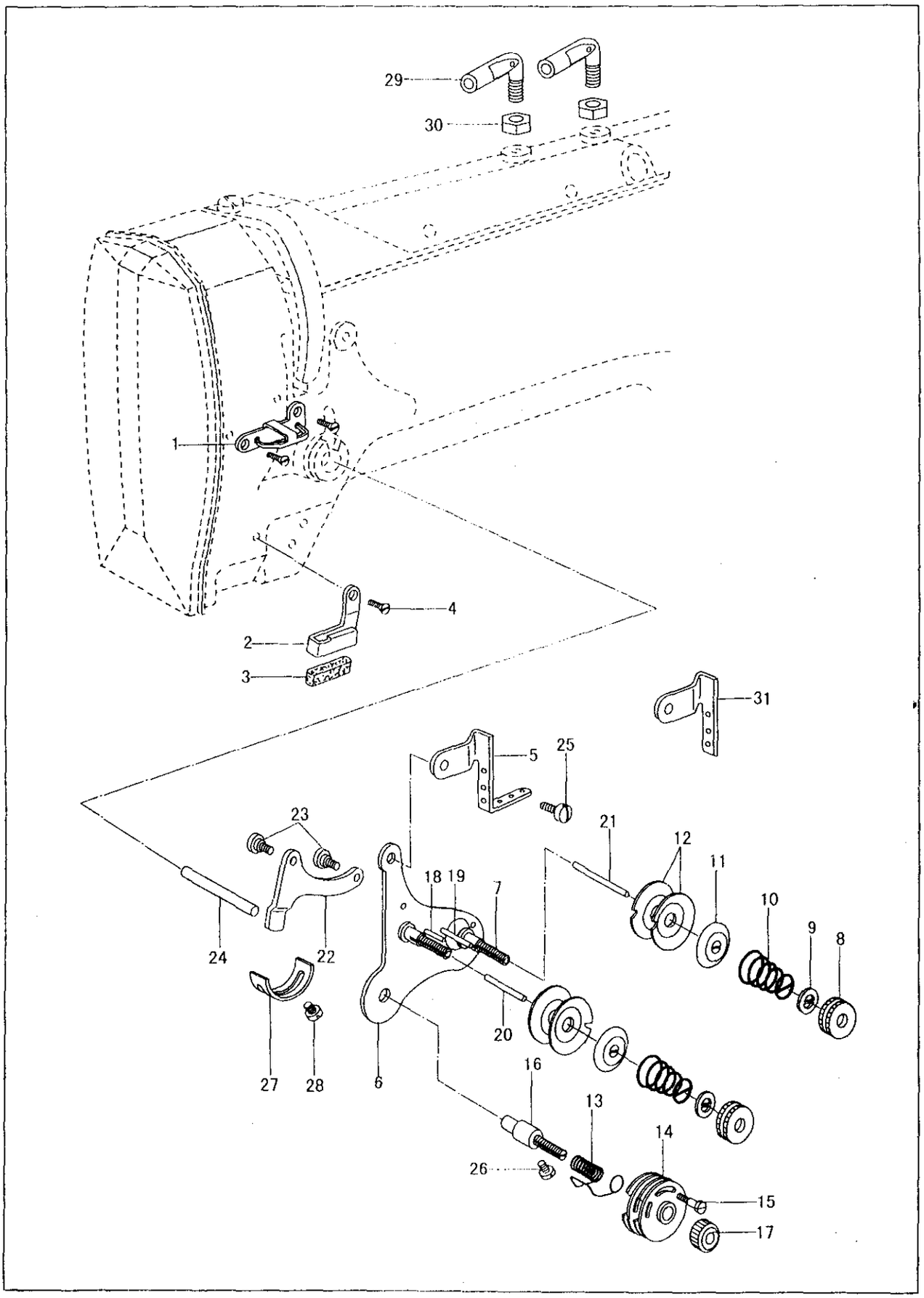
## 6. Upper feed and presser foot lifter parts



## 6. Upper feed and presser foot lifter parts

| No. | Part number | Name | Qt. | Remark |
|---|---|---|---|---|
| 1 | 91WF5-001 | Needle bar vibrating bracket | 1 | |
| 2 | 22WF5-002 | Pin | 1 | |
| 3 | 16WF1-011 | Screw | 1 | |
| 4 | 1WF5-009 | Guide plate | 1 | |
| 5 | 1WF5-010 | Screw | 1 | |
| 6 | 215120 | Guide rail | 1 | |
| 7 | 16WF1-059 | Screw | 2 | |
| 8 | 22WF5-004 | Needle bar vibrating shaft | 1 | |
| 9 | 22WF5-005 | Slide block | 1 | |
| 10 | 22WF6-006 | Slide block shaft | 1 | |
| 11 | 22WF1-020 | Screw | 1 | |
| 12 | 91WF5-002 | Crank | 1 | |
| 13 | 22WF3-011 | Screw | 1 | |
| 14 | 215121 | Slide block | 1 | |
| 15 | 91WF5-003 | Needle bar vibrating link | 1 | |
| 16 | 22WF5-011 | Screw | 1 | |
| 17 | 22WF1-0042 | Nut | 1 | |
| 18 | | Oil wick | 1 | |
| 19 | 22WF5-012 | Presser foot lift shaft | 1 | |
| 20 | 22WF5-013 | Bushing | 2 | |
| 21 | 22WF5-014 | Link | 1 | |
| 22 | 22WF5-015 | Screw | 1 | |
| 23 | 22WF5-016 | Nut | 1 | |
| 24 | 22WF5-017 | Crank | 1 | |
| 25 | 16WF3-030 | Screw | 1 | |
| 26 | 22WF5-018 | Screw | 1 | |
| 27 | 16WF2-023 | Washer | 1 | |
| 28 | 22WF5-019 | Gasket | 1 | |
| 29 | 22WF5-020 | Wing nut | 1 | |
| 30 | 22WF5-021 | Eccentric link | 1 | |
| 31 | | Eccentric link bearing | 1 | |
| 32 | 22WF5-022 | Eccentric wheel | 1 | |
| 33 | 22WF5-023 | Screw | 2 | |
| 34 | 22WF5-024 | Collar | 1 | |
| 35 | 22WF4-002 | Screw | 2 | |
| 36 | 22WF5-026 | Presser foot lift vibrating plate | 2 | |
| 37 | 22WF5-027 | Screw | 1 | |
| 38 | 22WF5-028 | Link | 1 | |
| 39 | | Oil wick | 1 | |
| 40 | 22WF5-029 | Presser bar | 1 | |
| 41 | | Oil wick | 1 | |
| 42 | 22WF5-030 | Spring | 1 | |
| 43 | 22WF5-031 | Spring bar | 1 | |
| 44 | | | | |
| | 91WF5-004 | Walking presser foot | 1 | |
| 45 | 22WF5-033 | Screw | 1 | |
| 46 | 49WF5-009 | Screw | 1 | |
| 47 | | | | |
| | 88WF2-002 | Needle bar | 1 | |
| 48 | 88WF2-001 | Needle clamp | 1 | |
| 49 | 22WF1-003 | Screw | | |
| | 16WF1-007 | Screw | 2 | |
| 50 | 1F-009 | Needle | | |
| | | | 2 | DP×17 |
| 51 | 91WF1-001 | Needle bar connector | 1 | |
| 52 | 16WF1-009 | Screw | 1 | |
| 53 | | Oil wick | 1 | |

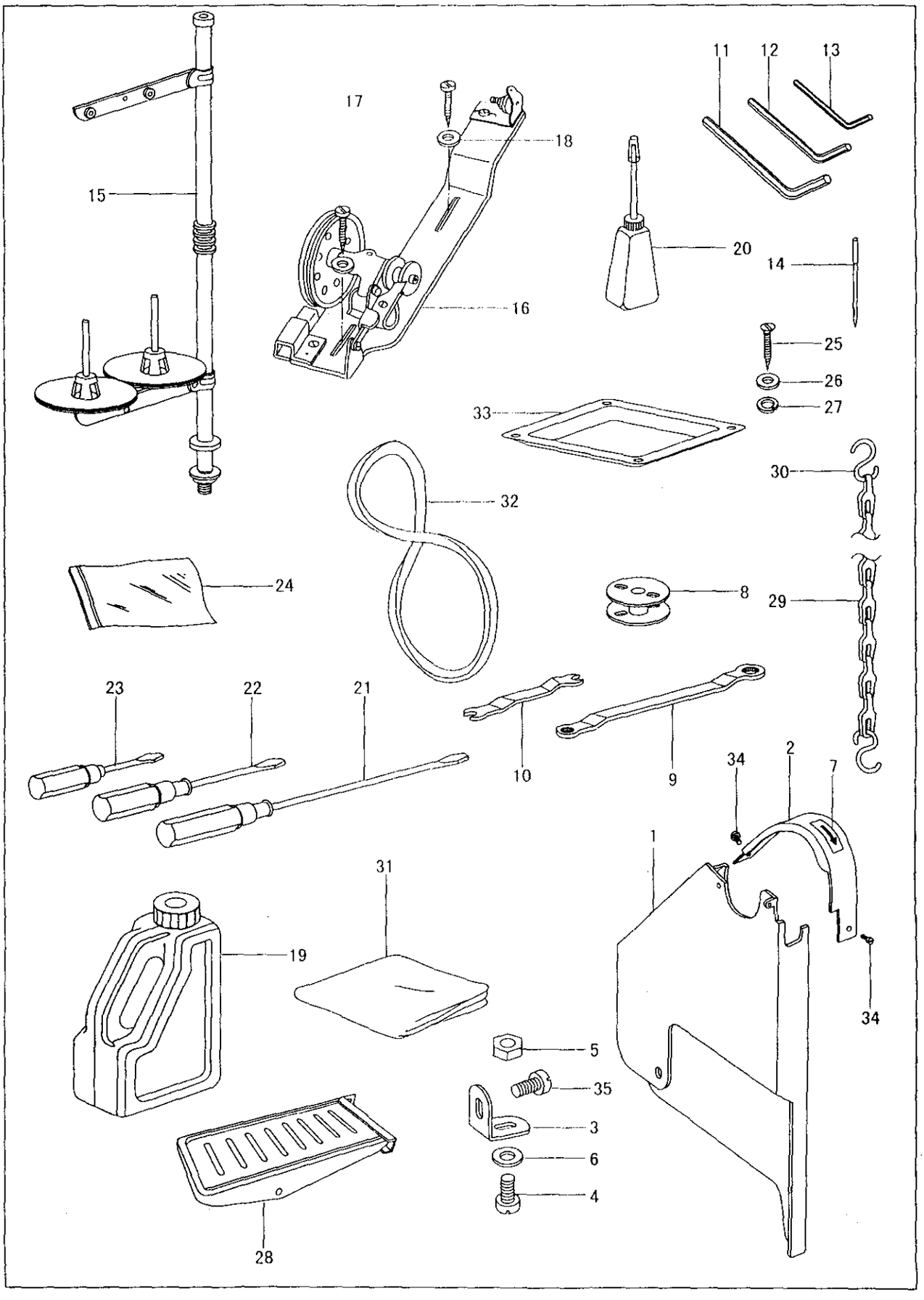
## 7. Threading parts



## 7. Threading parts

| No. | Part number | Name | Qt | Remark |
|---|---|---|---|---|
| 1 | 25057 | Upper thread guide | 1 | |
| 2 | 16WF2-013 | Lower thread guide | 1 | |
| 3 | 16WF2-014 | Felt | 1 | |
| 4 | 16WF2-015 | Screw | 3 | |
| 5 | 89WF2-017 | Thread guide | 1 | |
| 6 | 25WF2-009A1 | Set plate | | |
| | 16WF2-046A1 | Set plate | 1 | |
| 7 | 16WF2-046A2 | Screw | | |
| | | Screw | 2 | |
| 8 | 16WF2-046A3 | Nut | | |
| | | Nut | 2 | |
| 9 | 153029 | Stop plate | | |
| | | Stop plate | 2 | |
| 10 | 037536 | Spring | | |
| | | Spring | 2 | |
| 11 | 16WF2-046A5 | Thread releasing plate | | |
| | | Thread releasing plate | 2 | |
| 12 | 16WF2-046A6 | Thread tension plate | | |
| | | Thread tension plate | 4 | |
| 13 | | | | |
| | 19WF2-014 | Thread take-up spring | 1 | |
| 14 | 16WF2-046A8 | Thread control assembly | | |
| | | Thread control assembly | 2 | |
| 15 | | | | |
| | 1WF1-010R1 | Screw | 1 | |
| 16 | | | | |
| | 25WF2-009A2 | Thread take-up spring shaft | 1 | |
| 17 | 16WF2-046A11 | Nut | 1 | |
| 18 | 16WF2-046A12 | Thread separating pin | 1 | |
| 19 | 19WF2-011 | Pin (long) | 1 | |
| 20 | 19WF2-012 | Thread releasing pin (short) | 1 | |
| 21 | 115955 | Thread releasing pin (long) | 1 | |
| 22 | 16WF2-046A14 | Thread erecting plate | 1 | |
| 23 | 16WF2-046A15 | Screw | 2 | |
| 24 | 103723 | Thread releasing bar | 1 | |
| 25 | 16WF2-020 | Screw | 1 | |
| 26 | 13WF2-008 | Screw | 1 | |
| 27 | 16WF2-049 | Position plate | 1 | |
| 28 | 16WF2-050 | Screw | 1 | |
| 29 | 13WF2-066 | Thread guide | | |
| | | | 2 | |
| 30 | 13WF2-067 | Screw | | |
| | | | 2 | |
| 31 | 49WF2-022 | Three-eye thread finger | | |

## 8. Accessories



## 8. Accessories

| No. | Part number | Name | Qt. | Remark |
|---|---|---|---|---|
| 1 | 91WF6-001 | Safety guard (1) | 1 | |
| 2 | 91WF6-002 | Safety guard (2) | 1 | |
| 3 | 91WF6-003 | Connecting plate | 2 | |
| 4 | 36WF5-003 | Screw | 2 | |
| 5 | 2KT2-026 | Nut | 2 | |
| 6 | 21WF1-036 | Washer | 2 | |
| 7 | | Arrow mark | 1 | |
| 8 | 88WF2-012 | Bobbin | | |
| | | Bobbin | 12 | |
| 9 | | Box wrench | 1 | 10×11 |
| 10 | 91WF6-004 | Double ended spanner | 1 | |
| 11 | | Spanner | 1 | S=3mm |
| 12 | | Spanner | 1 | S=2.5mm |
| 13 | | Spanner | 1 | S=1.5mm |
| 14 | | Needle | 6 | DP×17 22# |
| 15 | | | | |
| | 1F-014 | Thread spool stand assembly | 1 | |
| 16 | S14420020 | Bobbin winder assembly | 1 | |
| 17 | 33TF-017 | Screw | 2 | |
| 18 | 33TYF-018 | Washer | 2 | |
| 19 | 1F-009 | Oil tank | 1 | |
| 20 | 33TF-011 | Oil pot | 1 | |
| 21 | 33TF-012 | Screwdriver (big) | 1 | |
| 22 | 33TF-013 | Screwdriver (medium) | 1 | |
| 23 | 33TF-014 | Screwdriver (small) | 1 | |
| 24 | | Accessory bag | 1 | |
| 25 | | Screw | 4 | M8×75GB68-85 |
| 26 | | Washer | 4 | GB96-85-8 |
| 27 | | Spring washer | 4 | GB93-87-8 |
| 28 | | Pedal assembly | 1 | |
| 29 | | Chain | 1 | |
| 30 | | Chain hook | 2 | |
| 31 | | Cover | 1 | |
| 32 | | V-belt | 1 | |
| 33 | 22WF2-008 | Oil reservoir | 1 | |
| 34 | 16WF3-005 | Screw | 1 | |
| 35 | 22T2-004 | Screw | 1 | |

## TABLE OF GAUGE PARTS

| GAUGE SIZE | | NEEDLE CLAMP | WALKING FOOT | PRESSER FOOT | NEEDLE PLATE | FEED DOG | PRESS PLATE(L) | PRESS PLATE(R) | SLIDE PLATE(L) | SLIDE PLATE(R) |
|---|---|---|---|---|---|---|---|---|---|---|
| inch | mm | | | | | | | | | |
| 1/8″ | 3.2 | 88WF2-001A | 91WF5-004A | 91WF3-001A | 91WF2-007A | 91WF4-003A | 91WF2-011A<br>91WF2-013A | 91WF2-012A<br>91WF2-014A | 91WF2-009A | 91WF2-010A |
| 1/4″ | 6.4 | 88WF2-001 | 91WF5-004 | 91WF3-001 | 91WF2-007 | 91WF4-003 | 91WF2-011<br>91WF2-013 | 91WF2-012<br>91WF2-014 | 91WF2-009 | 91WF2-010 |
| 5/16″ | 7.9 | 88WF2-001D | 91WF5-004B | 91WF3-001B | 91WF2-007B | 91WF4-003B | 91WF2-011B<br>91WF2-013B | 91WF2-012B<br>91WF2-014B | 91WF2-009B | 91WF2-010B |
| 3/8″ | 9.5 | 88WF2-001E | 91WF5-004C | 91WF3-001C | 91WF2-007C | 91WF4-003C | 91WF2-011C<br>91WF2-013C | 91WF2-012C<br>91WF2-014C | 91WF2-009C | 91WF2-010C |
| 1/2″ | 12.7 | 88WF2-001G | 91WF5-004D | 91WF3-001D | 91WF2-007D | 91WF4-003D | 91WF2-011D<br>91WF2-013D | 91WF2-012D<br>91WF2-014D | 91WF2-009D | 91WF2-010D |

STANDARD GAUGE SIZE:1/4"