GLOBAL

LP 2881 series

Postbed machine with stepper motor

Instruction manual & Parts book

Always switch off the electricity when working on the machine.

1. Safety

1.01 Safety symbols

Danger!
Points to be observed

Danger of injury for operating and specialist personnel!

Caution

Do not operate without finger guard and safety devices.
Before threading,changing bobbin and needle, cleaning etcs witch off main switch.

1.02 Important points for the user

- This Instruction Manual is a component of the machine and must be available to the operating personnel at all times.
- The Instruction Manual must be read before operating the machine for the first time.
- The operating and specialist personnel must to be instructed in the safeguards of the machine and safe work methods.
- It is the duty of the user to operate the machine in perfect running order.
- It is the obligation of the user to ensure that none of the safety mechanisms are removed or deactivated.
- It is the obligation of the user to ensure that only authorized persons operate and work on the machine.

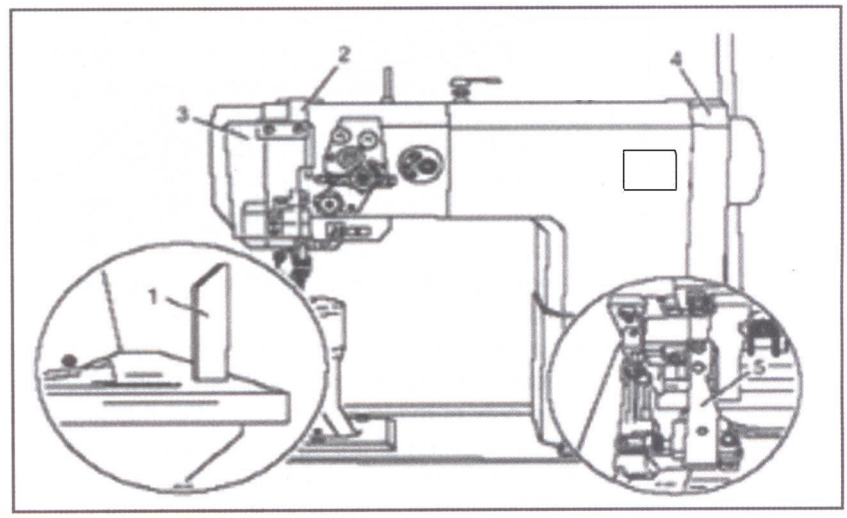
1.03 Danger

A working area of 1 meter is to be kept free both in front of and behind the machine in operation so that the machine is always easily accessible.

Never reach into the sewing area while sewing! Danger of injury by the needle!

Never leave objects on the table while adjusting the machine settings! Objects can become trapped or be slung away! Danger of injury!

Do not operate the machine without support 1! Danger due to top-heavy sewing head! Machine can tip over backwords when tilted!



Switch the machine off before tilting it backwards!
Danger of injury if the machine is started accidentally!

Do not operate the machine wihout its take-up-lever guard **2**!
Danger of injury due to the motion of the take-up lever!

On machines with thread lubricator, only operate the machine with the eye guard 3 lowered! The eye guard **3** protects the eyes from oil particles from the thread lubrication!

Do not operate the machine without belt guard **4**!
Danger of injury by rotating drive belt!

Do not operate the machine without tilt lock **5**!
Danger of crushing between sewing head and table top!

2 Specifications

Stitch type.....301(lockstitch)
Stitch length
Singl needle.....1.3-7mm
Double needle.....1.3-4.8mm
Clearance under roller presser.....7mm
Clearance width.....245mm
Clearance height.....115mm
Post heighe.....180mm

Sewing head dimensions
length.....approx.615mm
Width.....approx.240mm
Height(above table).....approx.500mm
Bedplate dimensions.....518x177mm

Max.speed
Singl needle.....2500spm
Double needle.....2000spm

Connection data
Operating voltage.....230V±10%, 50/60Hz
Max.power consumption.....1.2KVA

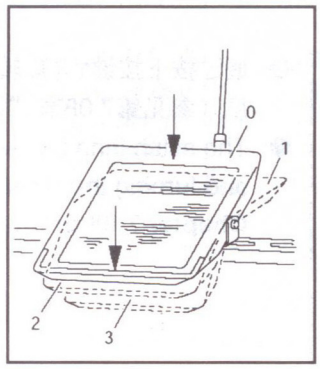
Net weight of sewing head.....approx.61kg
Gross weight of sewing head.....approx.71kg

Subject to alteration

Model
LP 8971
LP 8974

3 Controls

3.01 Pedal



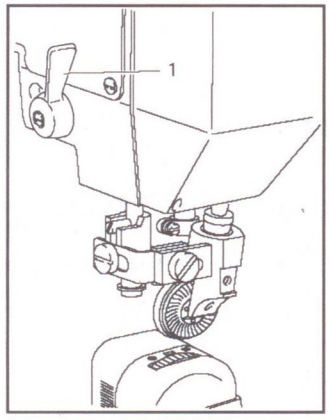
0= Neutral position

1= Sewing

2= Raiser roller presser

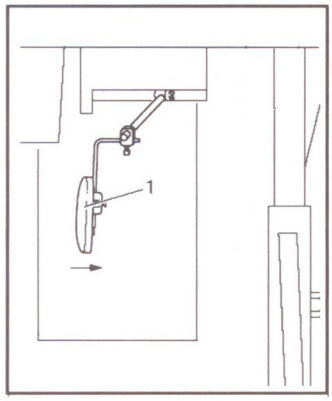
3= Trim sewing threads (on machines with-D..)

3.02 Lever for lifting roller presser



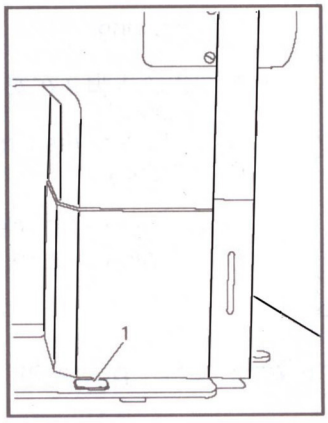
- The roller presser can be raised by turning lever **1**.

3.03 Knee lever



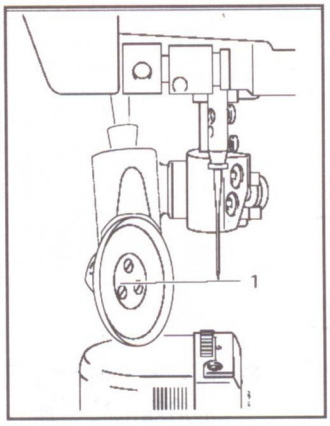
- The roller presser can be raised by pressing the knee lever **1** in the direction of the arrow.

3.04 Key for setting stitch length



- The stitch length is set by pressing key **1** and turning the balance wheel.

3.05 Swing out roller presser



- When the roller presser is raised, it can be swung out by pulling it lightly downwards.

4 Installation and comminssioning

The machine must only be installed and commissioned by qualified personnel!
All relevant safety regulations must be strictly adhered to!

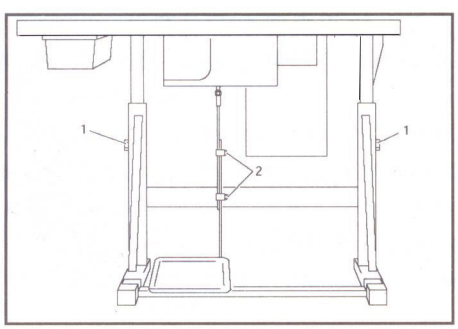
If the machine is delivered without a table, be sure to use a stand and table top that can hold the weight of the machine with its motor.
It is very important to ensure that the stand of the machine is firm and steady, also during sewing.

4.01 Installation

The site where the machine is installed must be provided with suitable connections for electric current.
It must be ensured that the standing surface of the machine site is firm and horizontal, and that sufficient lighting is provided for.

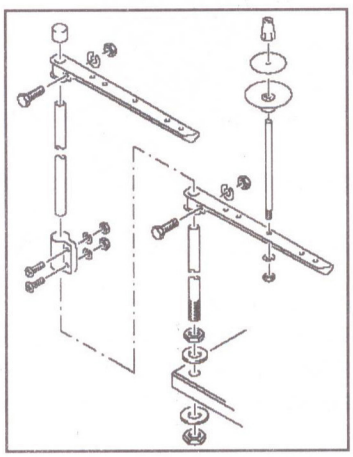
For packing and transportation reasons the table top is in the lowered position. The table height is adjusted as described below.

Adusting the table height



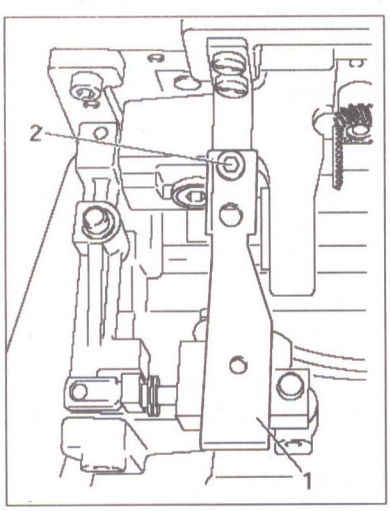
- Loosen screws **1** and **2** and set the table height as required.
- Firmly tighten screw **1**.
- Set the required pedal position and tighten screw **2**.

4.02 Fitting the reel stand



- Fit the reel stand as shown in Fig.
- Afterwards insert the stand in the hole of the table top and secure it with the nuts provided.

4.02.01 Fitting the tilt lock



Maschine ausschalten!
Verletzungsgefahr durch unbeasichtigtes Anlaufen der Maschine!

- Die im zubehor befindliche kippsicherung1 mit schraube 2 anschrauben.

Maschine nicht ohne kippsicherung 1 betreiben! Sicherung 1 betreilben!
Quetschgefahr zwischen oberteil und tischplatte!

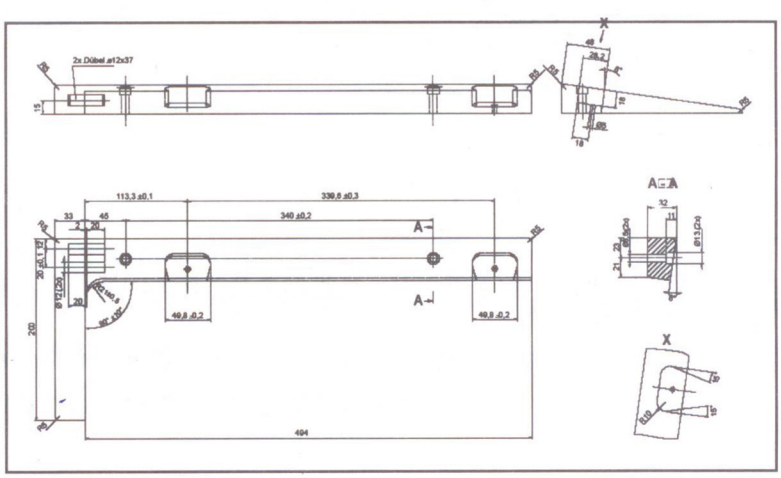
4.03 Commissioning

- Check the machine, particularly the electrical wiring for any damage.
- Clean the machine thoroughly and then oil it or fill oil in .
- Have a mechanic check whether the motor of the machine can be operated with the available power supply, and that the motor is correctly connected in the junction box. If there are any discrepancies. the machine **must not be operated under any circumstances**.

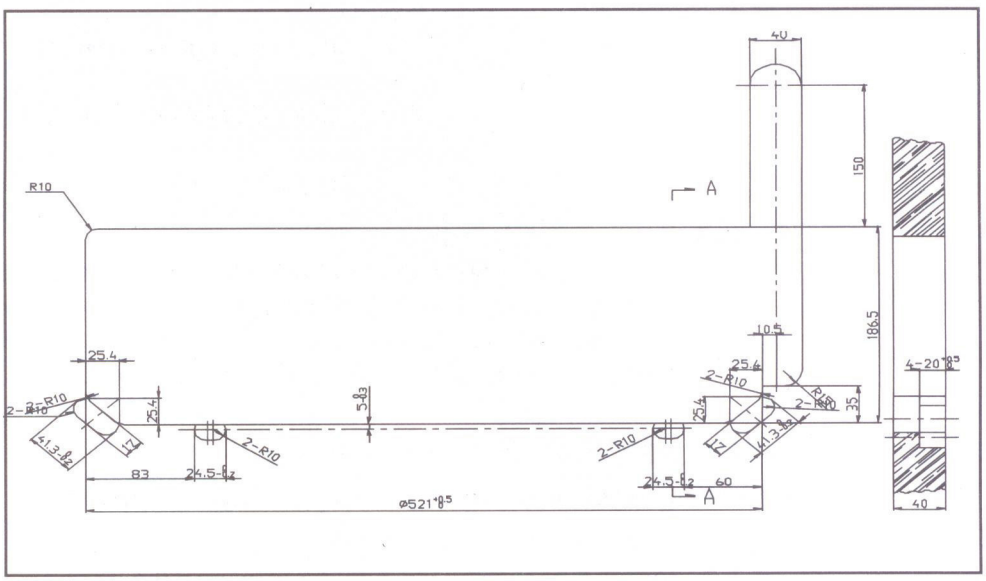
The machine only be connected to an earthed socket!

- When the machine is running, the balance wheel must turn towards the operator. If it does not, the motor connection must be changed by a mechanic.
- Machines with pneumatic equipment must be connected to the compressed air supply. The pressure gauge should indicate a pressure of 6 bar. If necessary, adjust to the correct setting (see **Chapter** 6. 01 **Checking adjusting the air pressure**).

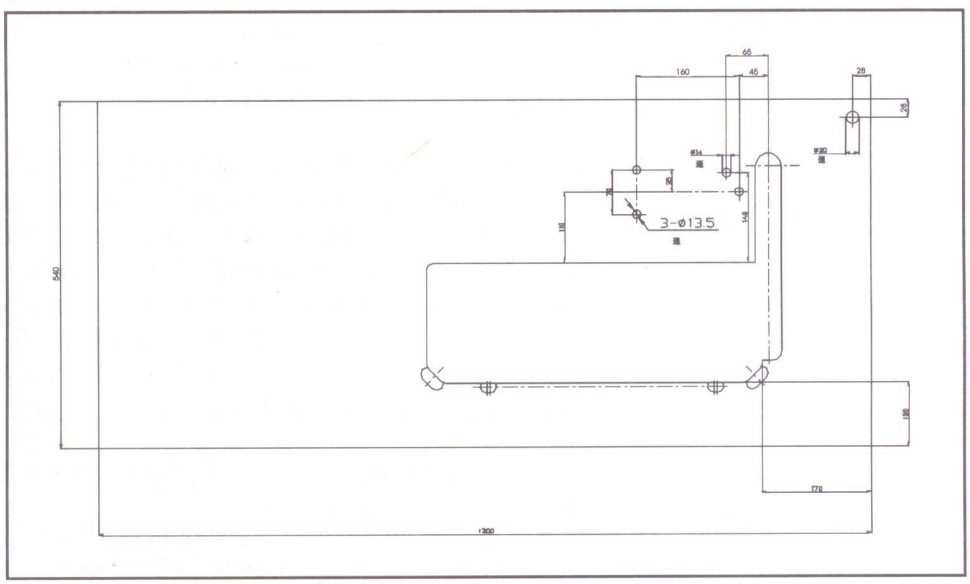
4.04 Tilted work base



4.05 Tilted work base



4.06 Mounting the table top



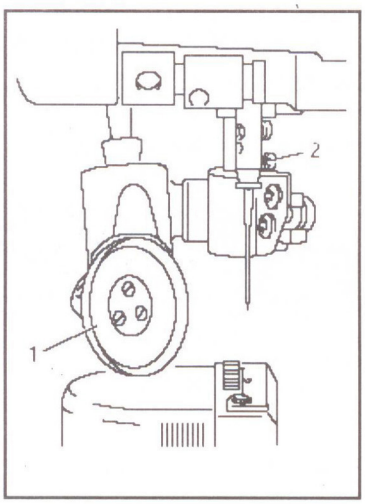
5 Preparation

All instructions and regulations in this Instrution Manual must be observed .
Special attention must be paid to all safety regulations!

All setting-up work must only be carried out by personnel with the approp-riate training. For all setting-up work the machine must be disconnected from its power supply by turning off the on/off switch, or removing the plug from the electric power socket.

5. 01 Inserting needle on model

Switch the machine off! Danger of injury if the machine is started accidentally!



Only use needles of system **134**

- Raise the roller presser **1** and swing it out
- Loosen screw **2** and insert the needles . as far as possible. The long groove must face to the left on model LP 8971
- Tighten screw **2** and swing roller presser **1** back to position.

The Choice of needle depends on the model of the machine and the thread and material used 。

5.02 Winding the bobbin thread; adjusting the primary thread tension

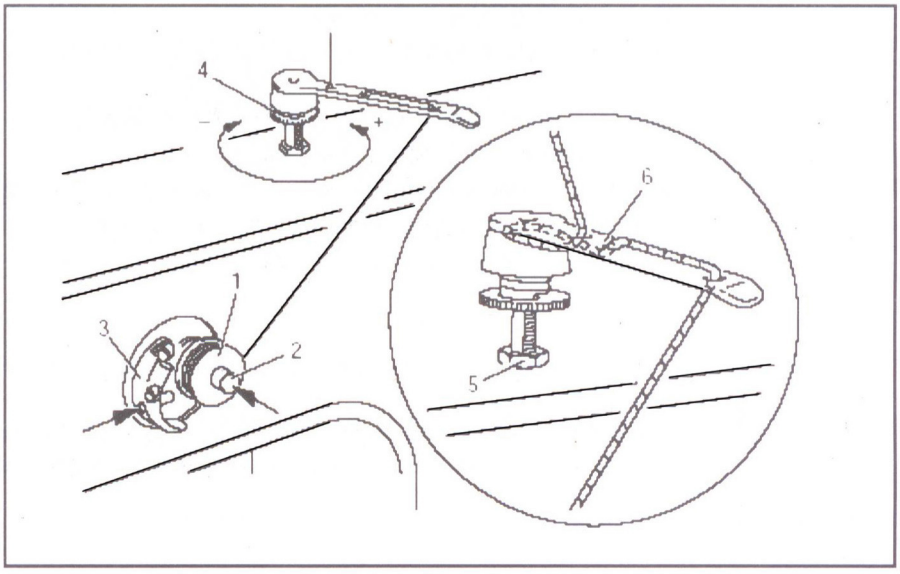
- Place an empty bobbin **1** into bobbin winder spindle **2**.
- Thread the bobbin as shown in **Fig.** And wind it clockwise around bobbin **1** a few times
- Switch on the bobbin winder while pressing bobbin winder spindle **2** and lever **3**.

The bobbin is filled up during sewing.

- The thread tension of bobbin **1** can be adjusted by knurled screw **4**.
- The bobbin winder stops automatically when bobbin **1** is full.

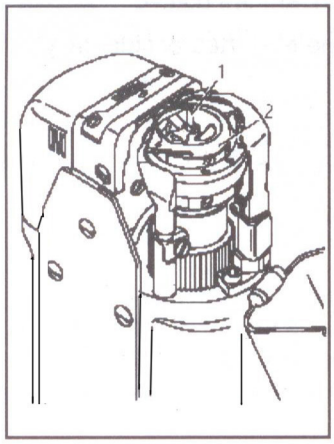
If the thread is wound unevenly:

- Loosen nut **5.**
- Turn thread guide **6** accordingly.
- Tighten nut **5.**



5.03 Removing/Inserting the bobbin case

Switch the machine off! Danger of injury if the machine is started accidentally!



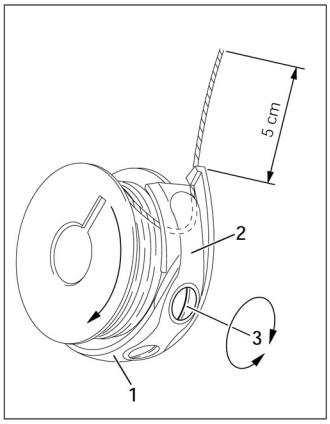
Removing the bobbin case:

- Open the post cap.
- Raise latch **1** and remove bobbin case **2**.

Inserting bobbin case:

- Insert bobbin case **2**.
- Close the latch and close the post

5.04 Threading the bobbin case/Adjusting the bobbin thread tension



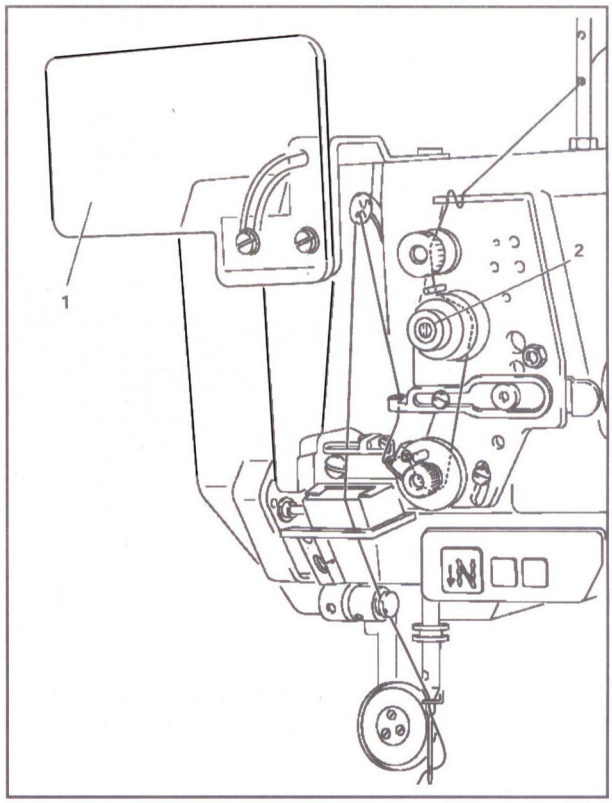
- Insert the bobbin into the bobbin case **1**.
- Pass the thread through the slot under spring **2**.
- Pass the thread through the notch.
- Adjust the thread tension by turning screw **3**.

When the thread is pulled, the bobbin must rotate in the direction of the arrow.

5.05 Threading the needle thread and regulating its tension on model LP 8971

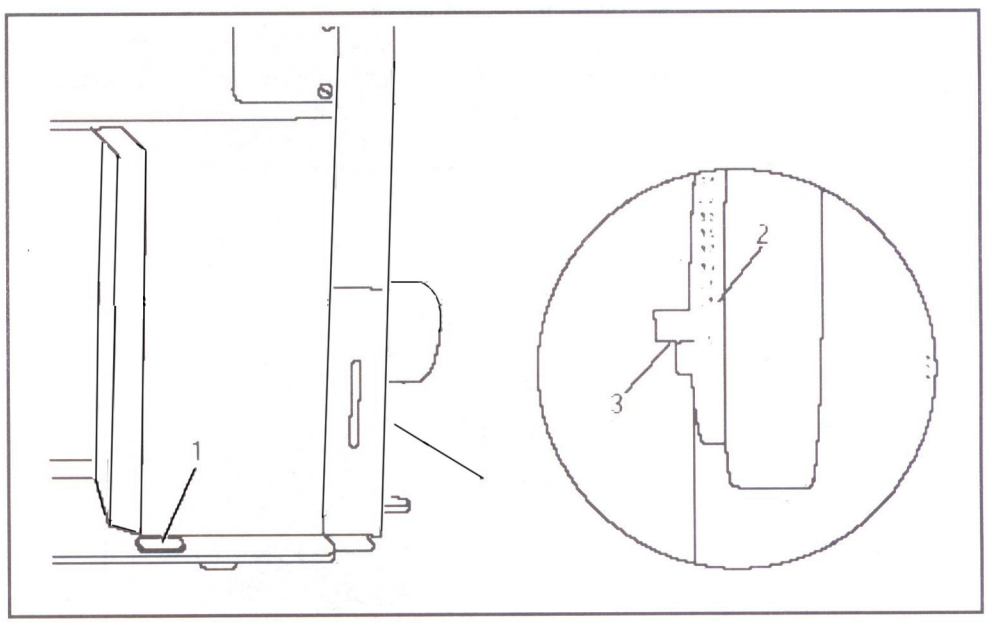
Switch the machine off!
Danger of injury if the machine is started accidentally!

- Tilt up the eye guard **1**.
- Thread the needle thread as shown in **Fig.**
- Adjust the needle thread tension by turning milled screw **2**.



5.06 Setting the stitch length

- Press key **1** and at the same time turn the balance wheel until the stitch setter clicks into position.
- Hold down key **1** and turn the balance wheel to and fro until the stitch lengthrequired is shown on the scale **2** opposite the bottom edge **3** of the belt guard recess.

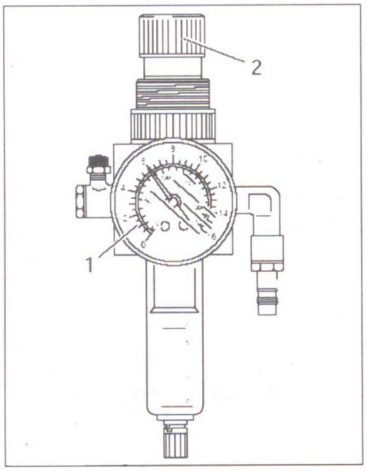


6 Care and Maintenance

Clean	daily, more frequently if in continuous operation
Oil level (thread lubrication/hook lubrication)	daily, before use
Oil the hook	daily, before use
Lubricate the bevel gears	once a year
Check/adjust air pressure	daily, before use
Clean air filter of air filter/lubricator	when required

These maintenance intervals are caculated for the average running time of a single shift operation. If the machine is operated more than this, shorter intervals are recommended.

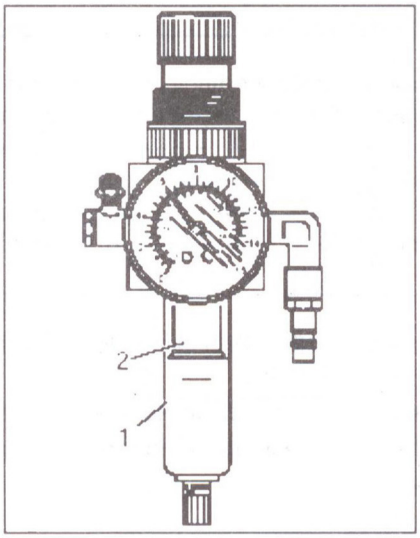
6.01 Checking ladjnsting the air pressure (on the pneumatic machine)



- Before operating the machine, always check the air presure on gauge **1**.
- Gauge **1** must show a pressure of **6 bar**.
- If necessary adjust to this reading.
- To do so, pull knob **2** upwards and turn it so that the gauge shows a pressure of **6 bar**.

6.02 Clean the air filter of the air-filter/lubricator (on the pneumatic machine)

Switch the machine off!
Disconnect the air hose at the air-filter/lubricator.



Draining water bowl **1:**

- Water bowl **1** drains itself automatically when the compressed-air hose is disconnected from the air-filter/lubricator.

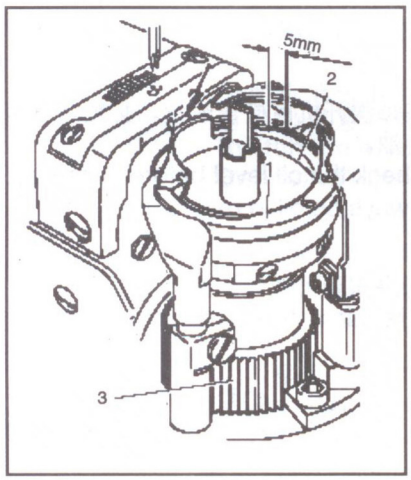
Cleaning filter **2**:

- Unscrew water bowl **1**.
- Take out filter **2**.
- Clean filter **2** with compressed air or isopropyl alcohol.
- Screw in filter **2** and screw on water bowl **1**.

6.03 Cleaning

Clean the hook, hook compartment and toothed wheel **3** every day, several times if in continuous use

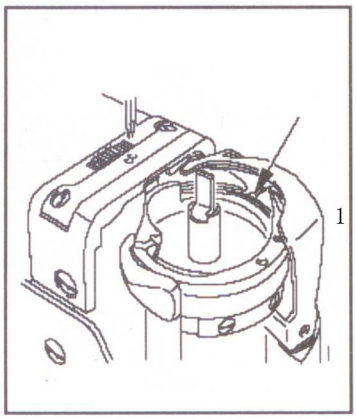
Switch the machine off!
Danger of injury if the machine is started accidentally!



- Bring the needle bar to its highest position.
- Open the post cap and remove the bobbin case cap and the bobbin.
- Unscrew hook gib **1**.
- Turn the hand wheel until the point of bobbin case **2** penetrates into the groove of the hook race approx. **5mm**.
- Remove bobbin case **2**.
- Clean th hook race with paraffin.
- When inserting the bobbin case **2**, ensure that the horn of the bobbin case **2** engages in the groove of the needle plate.
- Screw hook gib **1** back on and close the post cap.

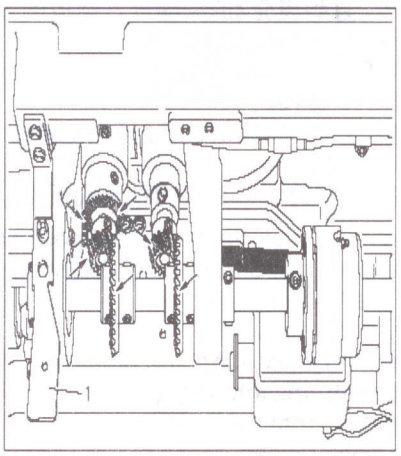
6.04 Oiling the hook

Switch the machine off!
Danger of injury if the machine is started accidentally!



- Pour **1-2 drops** of oil into hole **1** of the hook gib daily.
- Before commissioning the machine, and after long periods out of operation, pour a few drops of oil into the hook race (see arrow).

6.05 Oil bowl for hook lubrication



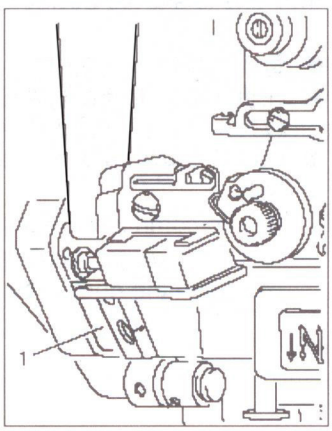
⚠ Check the oil level before each use. There must always be oil in reservoir **1**.

If required refill oil through hole.

⚠ Use only oil with a mean viscosity of 22.0mm²/s at 40℃ and a density of 0.865g/cm3 at 15℃.

6.06 Filling the oil reservoir of the thread lubrication unit

⚠ Control the oil level before each use.
There must always be oil in the reservoir **1.**



- If necessary, fill oil up to mark through hole

We recommend thread lubricatiing oil .

6.07 Lubricating the bevel gears

Switch the machine off!
Danger of injury if the machine is started accidentally!

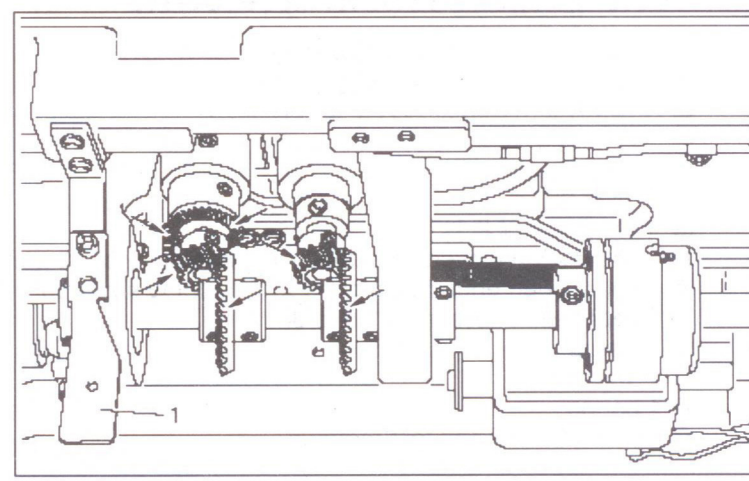
- All bevel gears must be supplied with new grease once a year.
- Tilt the sewing head back onto the support.

Fig. shows the bevel gears of the

- Apply grease to all the tooth flanks and the rack (see arrows).
- To set the sewing head upright, press tilt lock **1** backwards and set the sewing head upright using both hands.

Use both hands to set the sewing head upright!
Danger of crushing between the sewing head and the table top!

We recommend sodium grease with a dripping point of approx.150C.



7 Adjustment

Unless stated otherwise, during all adjustment work the machine must be disconnected from electric and pneumatic power supply!
Danger of injury if the machine is started accidentally!

7.01 Notes on adjustment

- All following adjustment are based on a fully assembled machine and may only be carried out by expert staff trainned for this purpose.
- Machine covers, which have to be removed and replaced to carry out checks and adjustments, are not mentioned in the text.
- The order of the following chapters corresponds to the most logical work sequence for machines which have to be completely adjusted. If only specific individual work steps are carried out, both the preceding and following chapters must be observed.
- Screws, nuts indicated in brackets ( ) are fastenings for machine parts, which must be loosened before adjustment and tightened again afterwards.

7.02 Tools, guages and other accessories

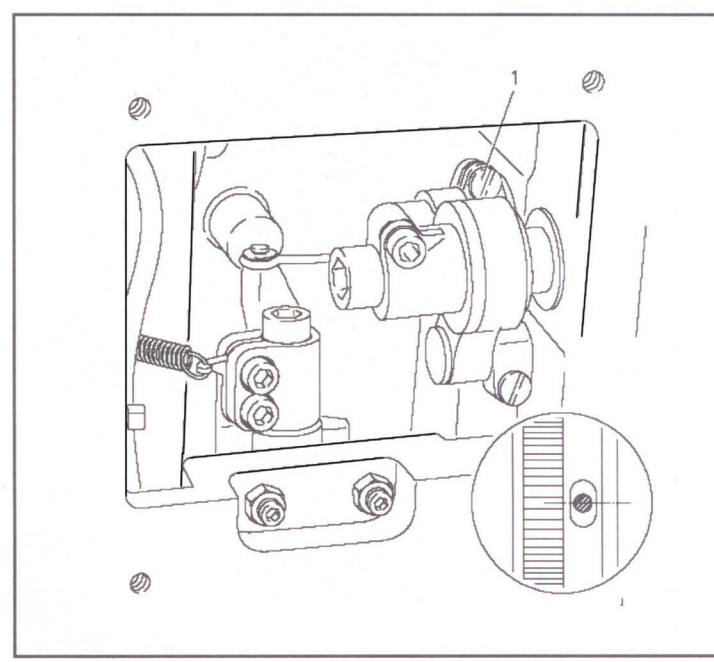
- 1 set of screwdrivers with blade widths from 2 to 10 mm
- 1 set of open ended wrenches with opening sizes from 7 to 13 mm
- 1 set of allen keys from 1.5 to 6mm
- 1 clamp
- 1 metal ruler
- 1 gauge
- Sewing thread and test material

7.03 Adjusting the basic machine

7.03.01 Needle position in sewing direction on the LP 8971

Requirement
With the stitch length set at its minimum, the needle should be positioned in the centre of the needle hole, as seen in the direction of sewing.

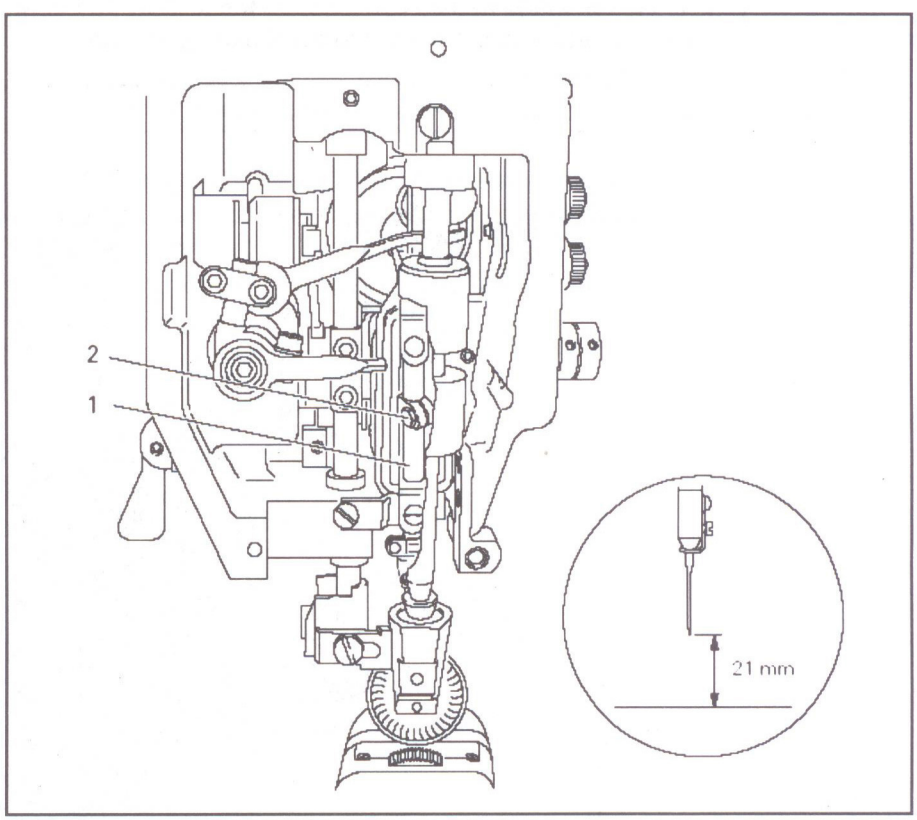
- Set the minimum stitch length.
- Adjust needle bar (screw **1**) according to the **Requirement**.



7.03.02 Prelininary adjustment of the needle height

Requirement
When the needle bar is at top dead centre, there must be a clearance of approx. 21mm between the needle point and the needle plate.

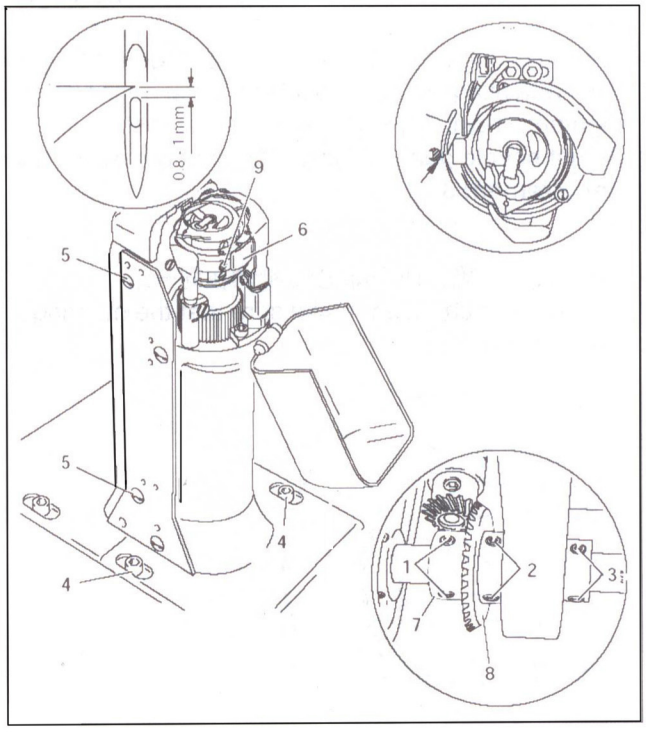
- Adjust needle bar **1** (screw **2**). Without turning it, according to the **Requirement**.



7.03.03 Needle rise, hook clearance, needle height and needle guard on the LP 8971

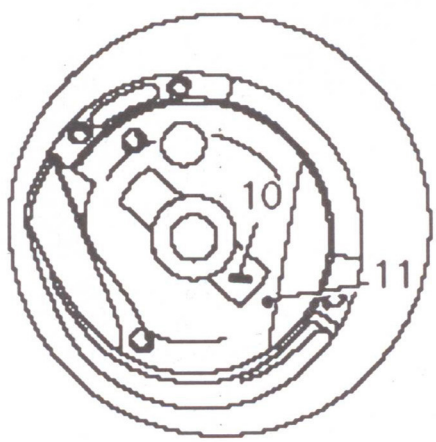
Requirement
With the needle bar positioned **2.0mm** after bottom dead centre and the stitch length set at **"0.8"** :

1. the hook point must be at needle centre with a hook-to-needle clearance of **0.05** to **0.1mm**.
2. the top of the needle eye must be **0.8** to **1.0 mm** below the hook point.
3. The needle guard **6** must touch the needle lightly.



- Loosen screw **1**, **2**, **3**, **4** and **5**.
- Bring needle bar to **2.0 mm** past bottom dead centre.
- Set hook point at needle centre, making sure that the needle is not deflected by needle guard **6**.
- Adjust needle height according to **Requirement 2**.
- Adjust hook post according to **Requirement 1** and tighten screw **4**.
- Making sure that there is some play in the bevel gear, tighten screws **2**.
- With retaining collar **7** tourching bevel gear **8** tighten screws **1**.
- Adjust needle guard **6** (screw **9**) according to **Requirement 3**.

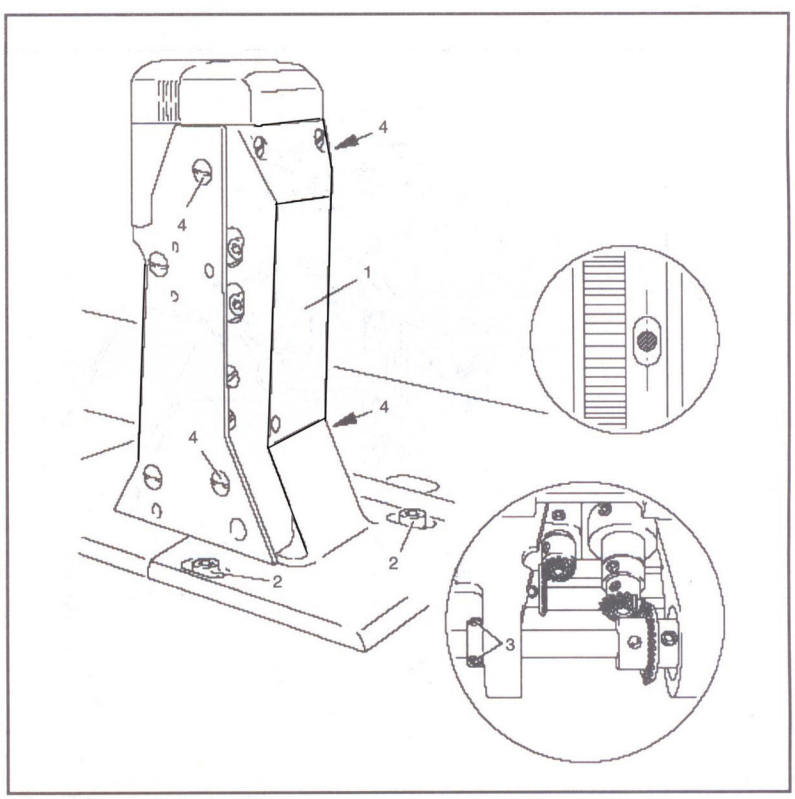
When the hook is changed, make sure that the markings **10** and **11** are both on one side.



7.03.04 Needle position crosswise to sewing direnction on the LP 8971

Requirement
As seen crosswise to the sewing direction, the needle must penetrate in the centre of the needle hole.

- Adjust feed wheel post **1** (screws **2, 3** and **4**) according to the **Requirement.**

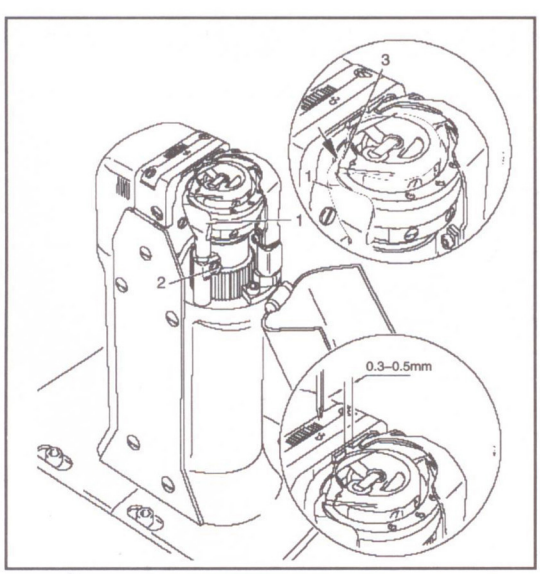


7.03.05 Height and stroke of the bobbin case opener

Requirement

1. The top edges of the bobbin case opener **1** and bobbin case **3** should be on one level.
2. when the bobbin case opener **1** has deflected the bobbin case to its furthest point, the catch of the bobbin case should be from **0.3** to **0.5** mm from the back edge of the needle plate recess.

- Adjust bobbin case opener **1** (screw **2**) in accordance with **Requirement 1**.
- Turn the balance wheel until the bobbin case opener has deflected the bobbin case to its furthest point.
- Adjust bobbin case opener **1** (screw **2**) in accordance with **Requirement 2**.



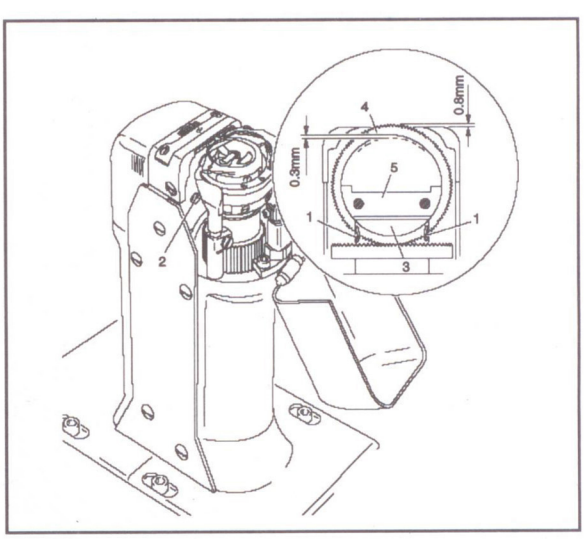
On the LP 8974 these adjustments must be repeated on the right post.
Depending on the thread size, a variation of the setting in Requirement **2** is permitted.

7.03.06 Height of the feed wheel on the LP 8974

Requirement

1. when pressure is applied to the feed wheel **4**, it should protrude from the needle plate by tooth height (approx. **0.8 mm**).
2. when no pressure is applied to the feed wheel **4**, it should have a vertical play of approx. **0.3 mm**.

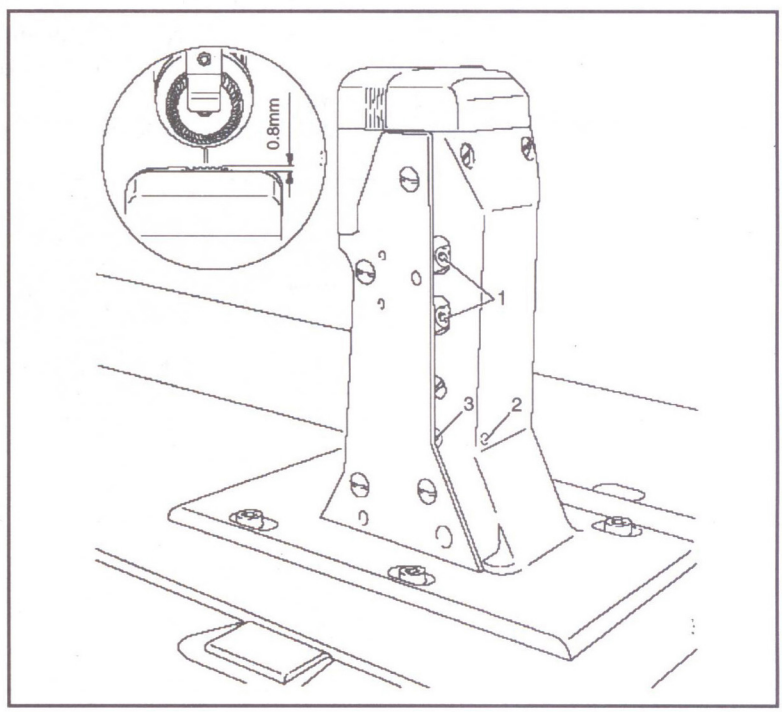
- Swing out the roller presser
- Loosen screws **1** and **2** (two screws each).
- Adjust drive wheel **3** according to **Requirement 1**, taking care to see that the teeth of drive wheel **3** and feed wheel **4** lock into each other properly.
- Tighten screws **1**.
- Adjust guide **5** according to **Requirement 2** and tighten screws **2**.



7.03.07 Height of the feed wheel on the

Requirement
Feed wheel should protrude from the needle plate by tooth height (appro. **0.8 mm**).

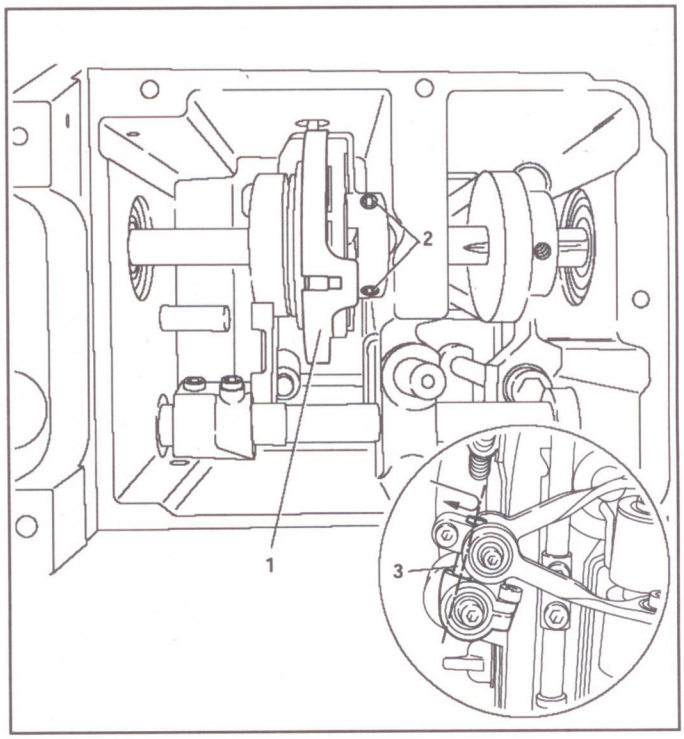
- Swing out the roller presser
- Loosen screws 1.
- Adjust eccentric 3 (fastening screw accessible through hole 2)according.
- Tighten screws 1.



7.03.08 Stitch length control eccentric

Requirement
When the needle (with maximum stitch length set), coming from top dead centre, is **3 mm** above the needle plate, the crank **3** must have reached its front point of reversal.

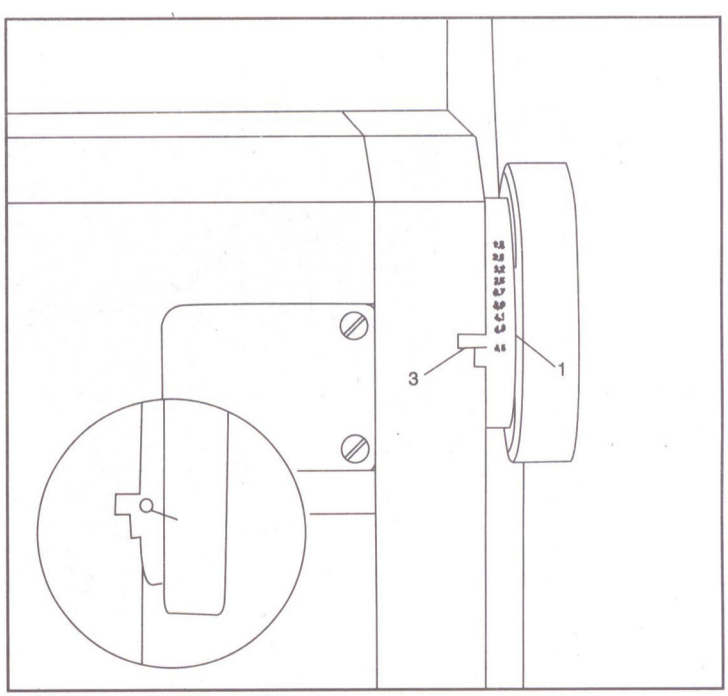
- Set the maximum stitch length.
- Turn stitch length control device **1** (screws **2**) according to **Requirement**.



7.03.09 Stitch length scale disk

Requirement
When the stitch length control device is locked in position, and the maximum stitch length is set, the marking line of the highest number on the scale disk **1** must be opposite the lower edge **3** of the belt guard recess.

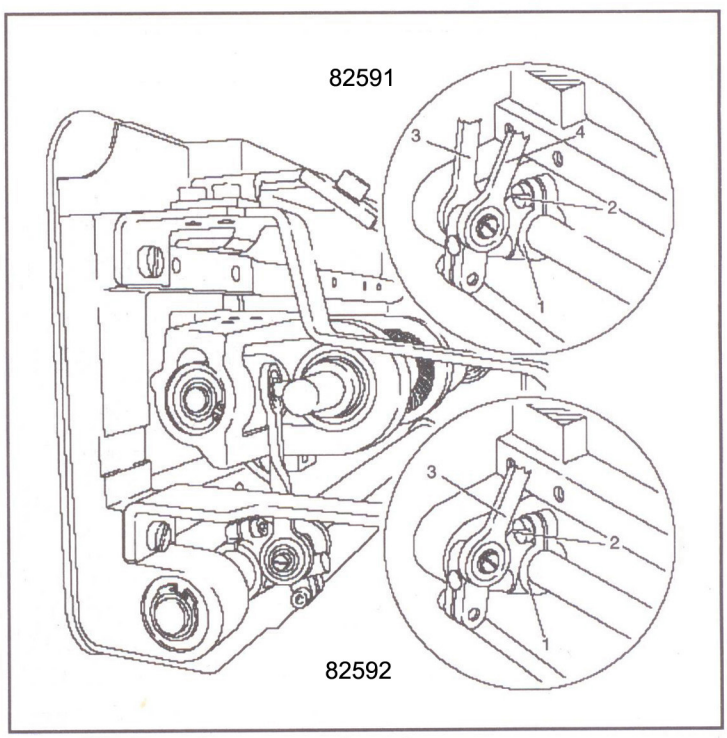
- Set the maximum stitch length.
- Turn the scale disk **1** according to the **Requirement**.



7.03.10 Shaft crank to feed wheel drive

Requirement
When the maximum length is set, the linkage rod **3**, or lingkage rods **3** and **4** on the model LP 8971 must be able to move freely when the balance wheel is turned.

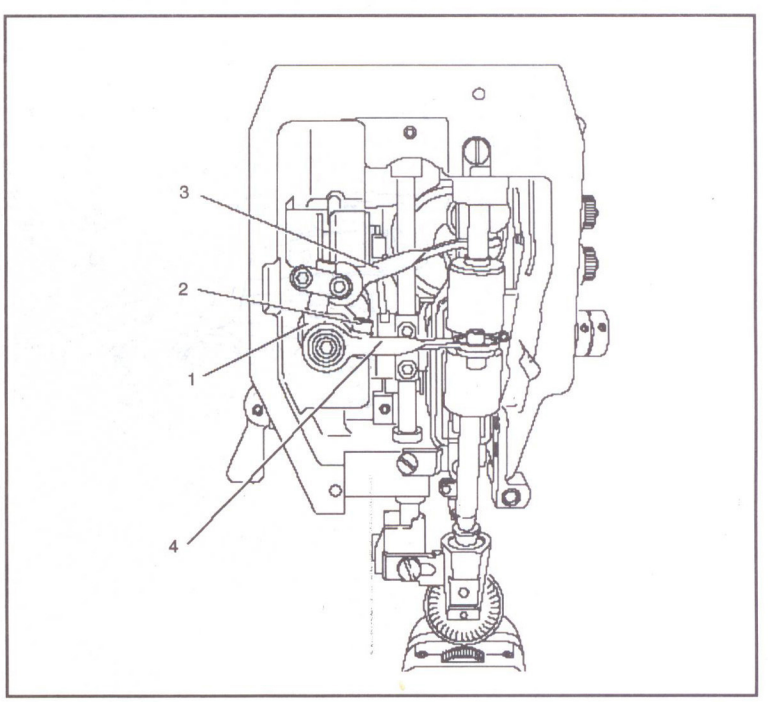
- Set the maximum stitch length.
- Twist or shift the shaft crank **1** (screw **2**) according to the **Requirement**.



7.03.11 Shaft crank to roller presser drive

Requirement
When the maximum stitch length is set, the linkage rods **3** and **4** must be able to move freely at their left and right point of reversal when the balance wheel is turned.

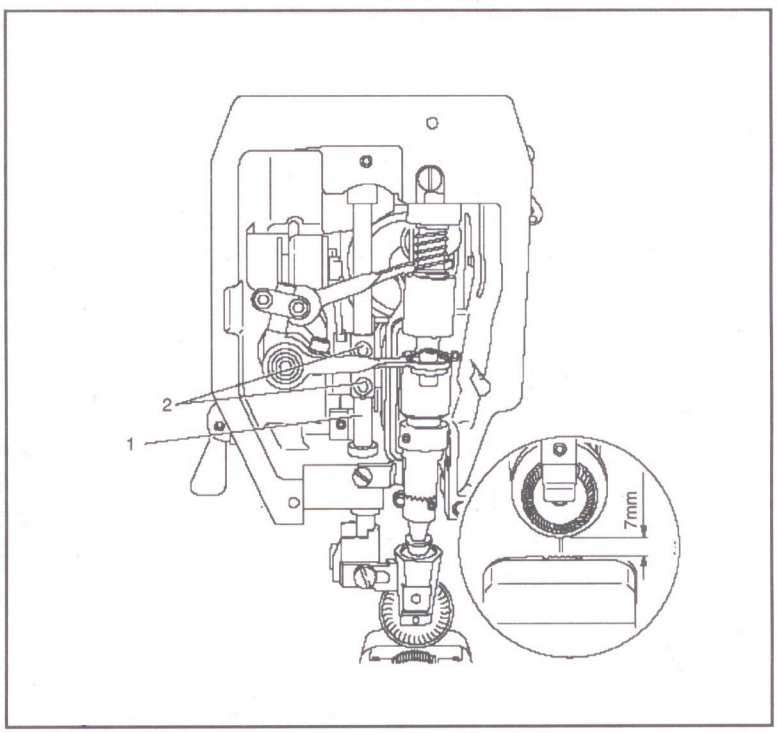
- Set the maximum stitch length
- Twist or shift the shaft crank **1** (screw **2**) according to the **Requirement**.



7.03.12 Clearance between roller presser and feed wheel

Requirement
When the presser bar lifter is raised, the clearance between the roller presser and the feed wheel must be **7 mm**.

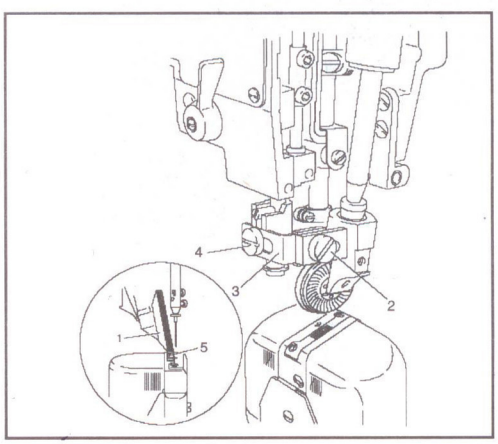
- Raise the presser bar lifter.
- Adjust the presser bar **1** (screws **2**) according to the **Requirement**. Make sure that the roller presser is parallel to the feed wheel.



7.03.13 Roller presser

Requirement
When the roller presser **1** is touching the feed wheel **5** it must:
1. be parallel to feed wheel **5**, as seen in the direction of sewing.
2. be in the centre of the needle (on model 8974 the left needle), as seen in the direnction of sewing.
3. be as near as possible to the needle (on model 8974 the left needle), as seen crosswise to the direction of sewing.

- Raise the roller presser.
- Always observe **Requirement 1** for subsequent adjustments.
- Adjust roller presser **1** (screw **2**) according to **Requirement 2**.
- Lower roller presser **1** to rest on feed wheel **5**.
- Adjust roller presser bracket **3** (screw **4**) according to **Requirement 3**.



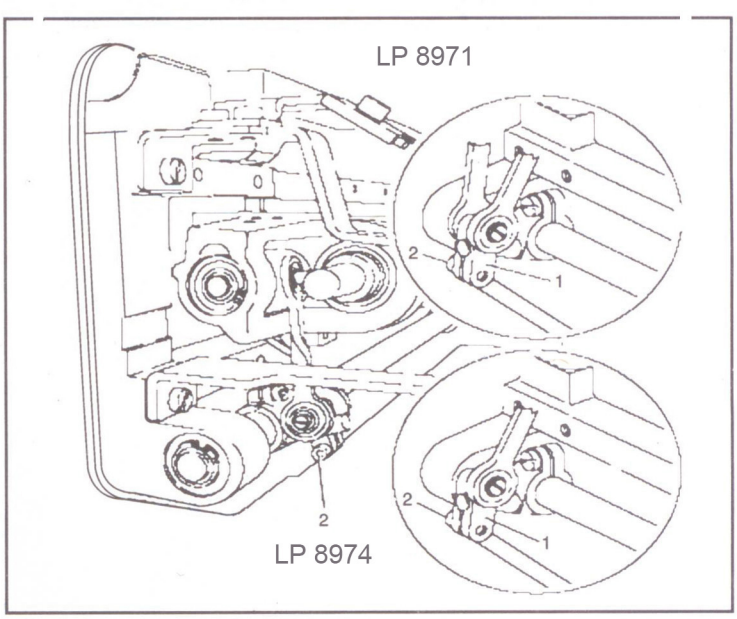
When sewing very tight curves, the roller presser 1 must be moved a little towards the operator.

7.03.14 Stitch length on stitch length scale

Requirement
When the stitch length is set at "3", and after the needle has entered a strip of leather **11 times**, the total length from the first to last needle penetration must be **30 mm**.

- Set stitch length "3".
- By turning the balance wheel, let the needle enter **11 times** and measure the total length.
- Adjust clamp **1** (screw **2**) according to the **Requirement**.

Clamp **1** must not be positioned diagonally to the rock shaft!

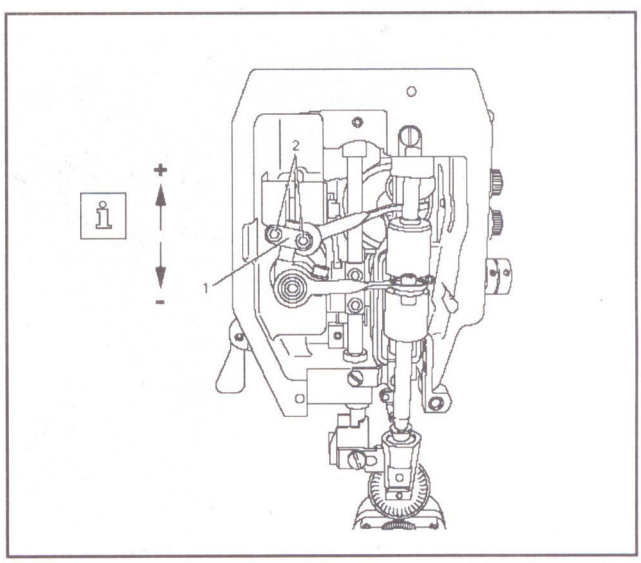


7.03.15 Synchronization of roller presser and feed wheel

Requirement
After **30 needle penetrations** in a strip of leather the total length from the first the the last penetration should be the same, both in the lower and the upper leather layer.

- Set stitch length "3".
- By turning the balance wheel, let the needle enter **30 times**.
- Compare the total sewn length of the lower and upper leather layer.
- Adjust clamp **1** (screw **2**) according to the **Requirement**.

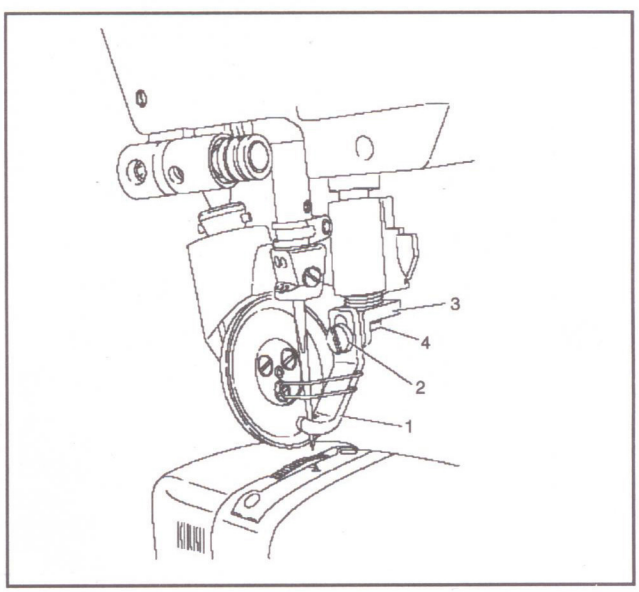
Clamp **1** must not be positioned diagonally to the rock shaft.



7.03.16 Retainer(only on 8974)

Requiement
The retainer **1** must:
1. be as close as possible to the needle, as seen in the direction of sewing .
2. be in the centre of the needle, as seen crosswise to the direction of sewing.
3. when the roller presser is lowered, the distance between the retainer 1 and the workpiece must be **0.2-0.3 mm**.

- Adjust retainer **1** (screw **2**) according to **Requirement 3**.
- Adjust bracket **3** (screw **4**) according to **Requirenment 1 and 2.**

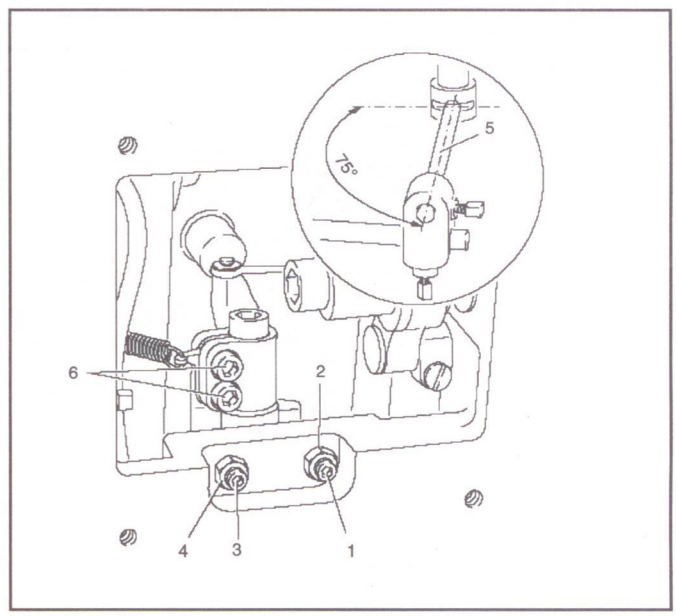


7.03.17 Knee lever

Requirement

1. before the roller presser rises, the knee lever must still have a slight play.
2. when the knee lever is raised as far as possible, the lever for the roller presser must drop automatically.
3. knee lever bar **5** must be at an angle of approx. **75°** to the bedplate.

- Adjust screw **1** (nut **2**) according to **Requirement 3**.
- Adjust screw **3** (nut **4**) according to **Requirement 2**.
- Set bar **5** (screws **6**) according to **Requirement 3**.

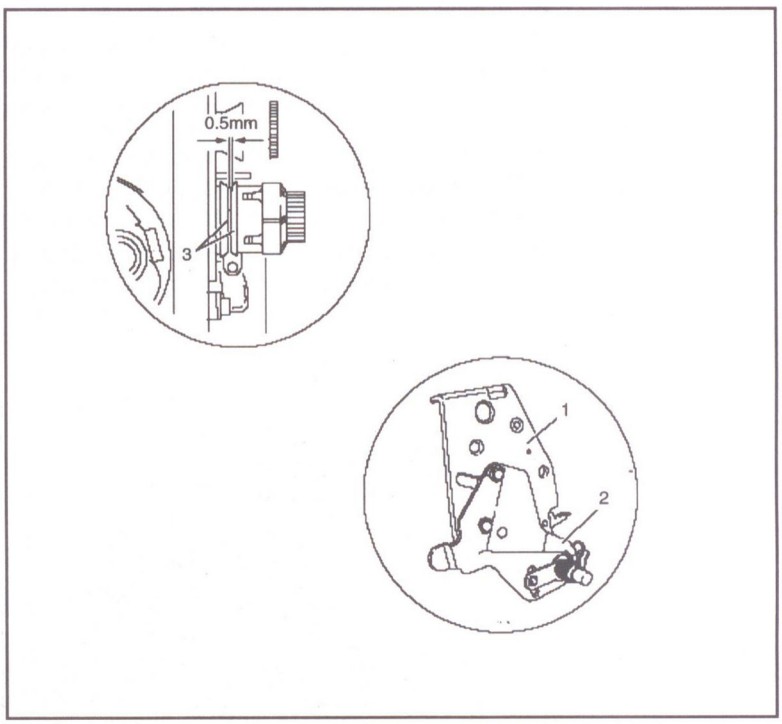


7.03.18 Needle thread tension release

Requirement

1. when the presser bar lifter is raised, the tension discs **3** should be pressed at least **0.5 mm** apart.
2. When the roller presser is lowered, the tension must be fully effective.

- Align tension mounting plate **1** and pressure plate **2** according to **Reqirement**.



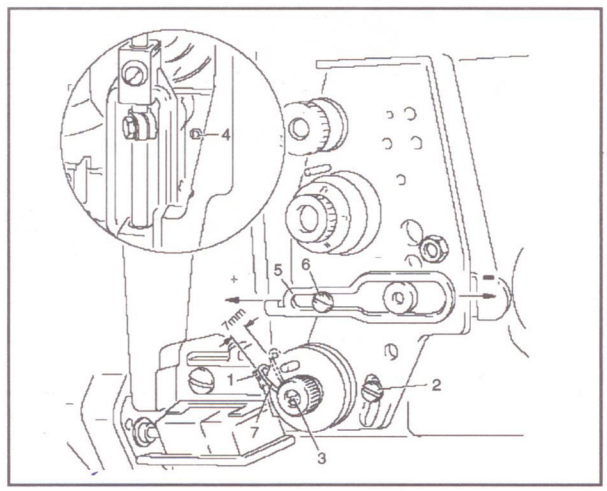
7.03.19 Thread check spring

Requirement

1. the movement of thread check spring **7** should be completed when the needle point penetrate the fabric (spring stroke approx. **7 mm**).
2. when the largest thread loop is formed while the thread is passed around the hook, the thread check spring **7** should rise slightly from its support.

- Adjust support **1** (screw **2**) according to **Requirement 1**.
- Adjust the spring tension by turning screw **3** (screw **4**).
- Adjust the thread regulator **5** (screw **6**) accord ing to **Requirement 2**.

For technical reasons it may be necessary to deviate from the specified spring stroke or spring tension.Move the thread regulator **5** (screw **6**) towards "+" (= more thread) or "–" (= less thread).

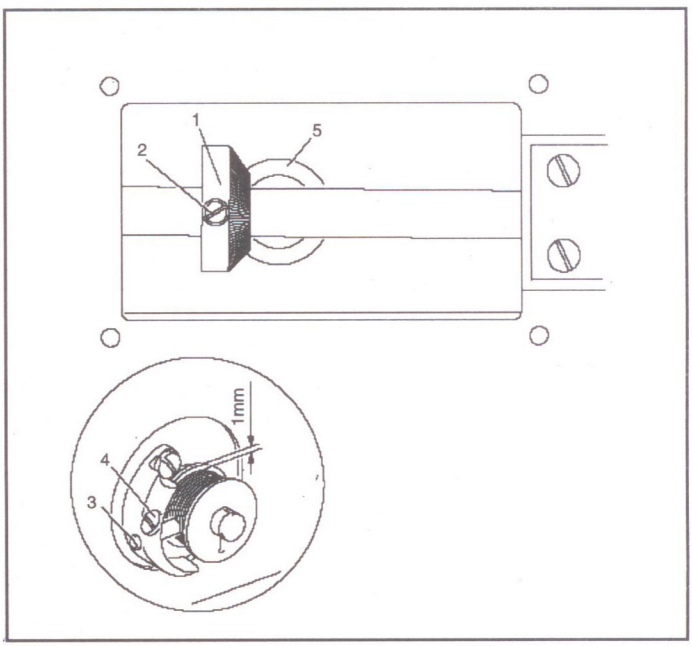


7.03.20 Bobbin winder

Requirement

1. when the bobbin winder is engaged, the winding spindle must be driven relilably. When the bobbin winder is disengaged, the friction wheel **5** must not be moved by drive wheel **1**.
2. the bobbin winder must switch itself off, when the filled thread is about **1 mm** from the edge of the bobbin.

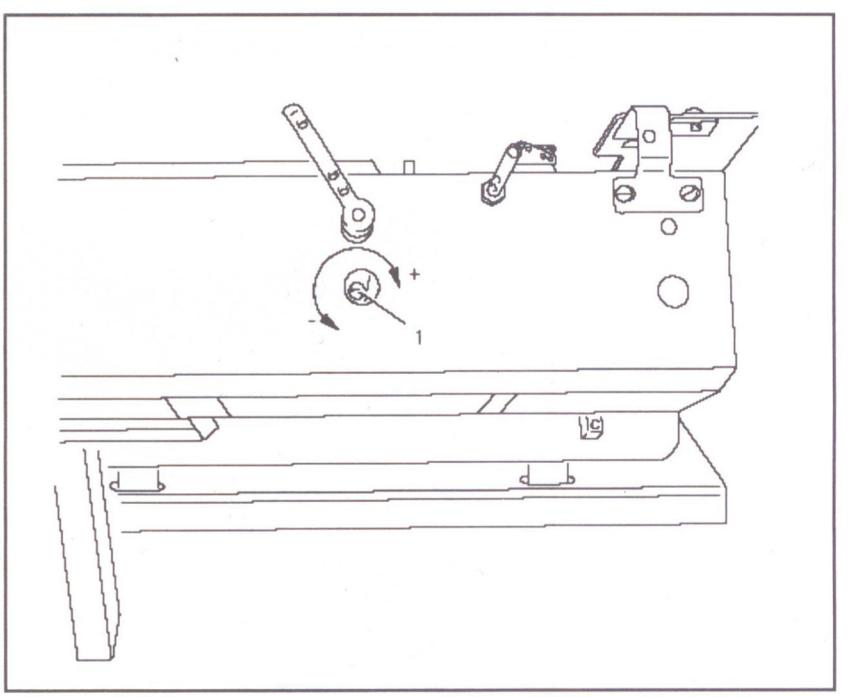
- Position drive wheel **1** (screws **2**) according to **Requirement 1**.
- Position bolt **3** (screw **4**) according to **Requirement 2**.



7.03.21 Pressure of roller presser

Requirement
The material must be fed smoothly. No pressure marks should be visible on the material.

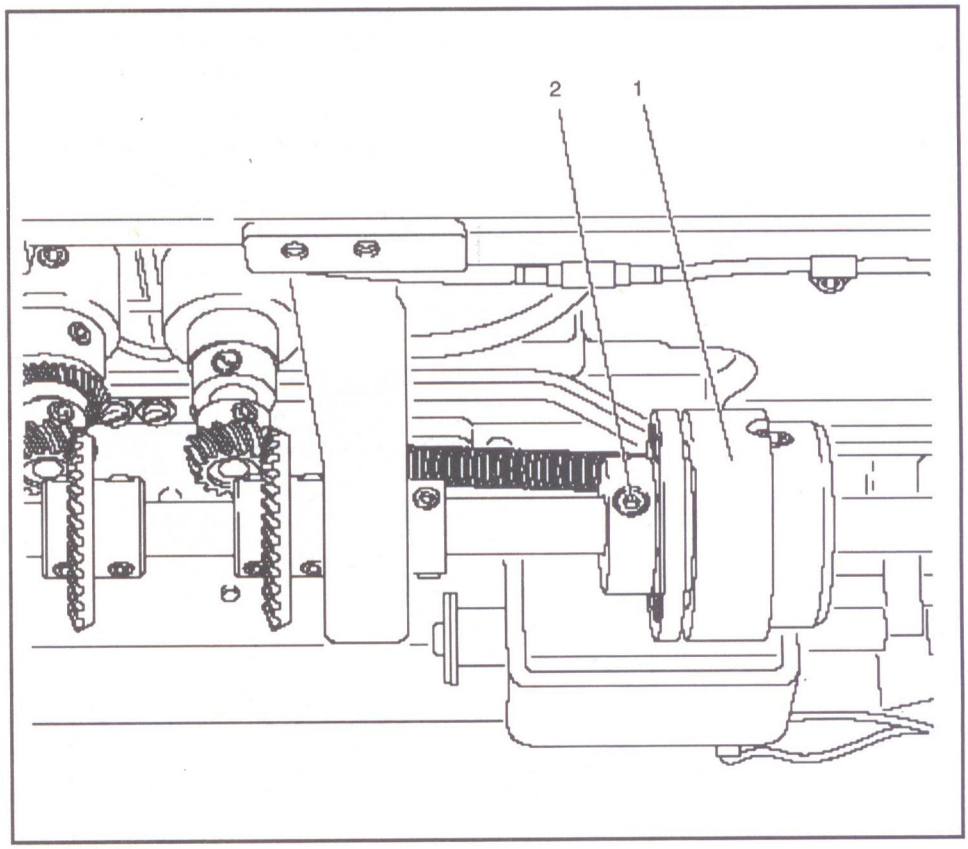
- Adjust roller pressure with screw **1** according to the **Requirement**.



7.03.22 Re-engage safety coupling

The coupling **1** is set by the manufacturer. When the thread jams, the coupling **1** disengages in order to avoid damage to the hooks.
A description of how to engage the coupling follows.

- Remove jammed thread.
- Hold coupling **1** with screw **2** and turn the balance wheel, until you feel coupling **1** snap back into place again.



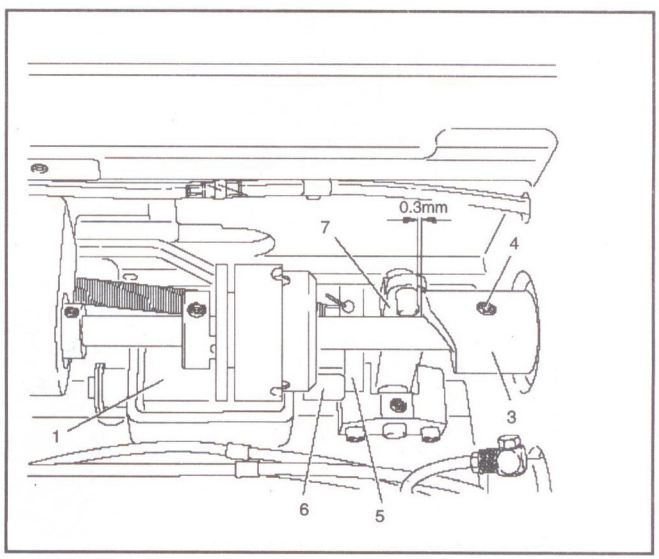
7.04 Adjusting the thread trimmer

7.04.01 Resting position of the roller lever/ radial position of the control cam

Requirement

1. when the thread trimmer is in resting positon, lever **5** should be touching piston **6** and the roller of roller lever **7** should be **0.3 mm** away from control cam **3**.
2. when the take-up lever is at top dead centre, control cam **3** should just have placed roller lever **7** in its resting position.

- Having made sure that piston **6** is positioned against the left stop, adjust magnet **1** (**2** screws) in accordance with **Requirement 1**.
- Adjust control cam **3** (screw **4**) in accordance with **Requirement 2**.

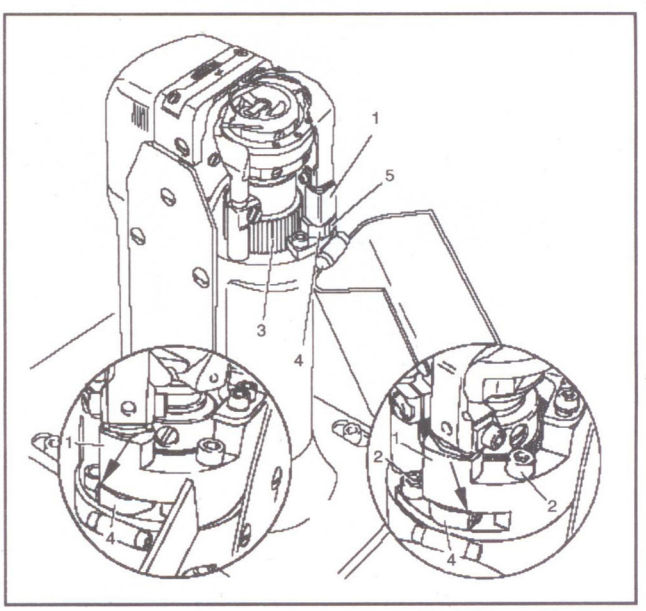


7.04.02 Position of the thread catcher holder

Requirement
1. there should be a minimum amount of play between toothed wheel **3** and toothed segment **4**.
2. both in the neutral position and the foremost position of the catcher, the distance between the toothed segment **4** and the outer edge of the thread catcher holder **1** should be the same (see arrow).

- Adjust the thread catcher holder **1** (screws **2**) according to **Requirements**.

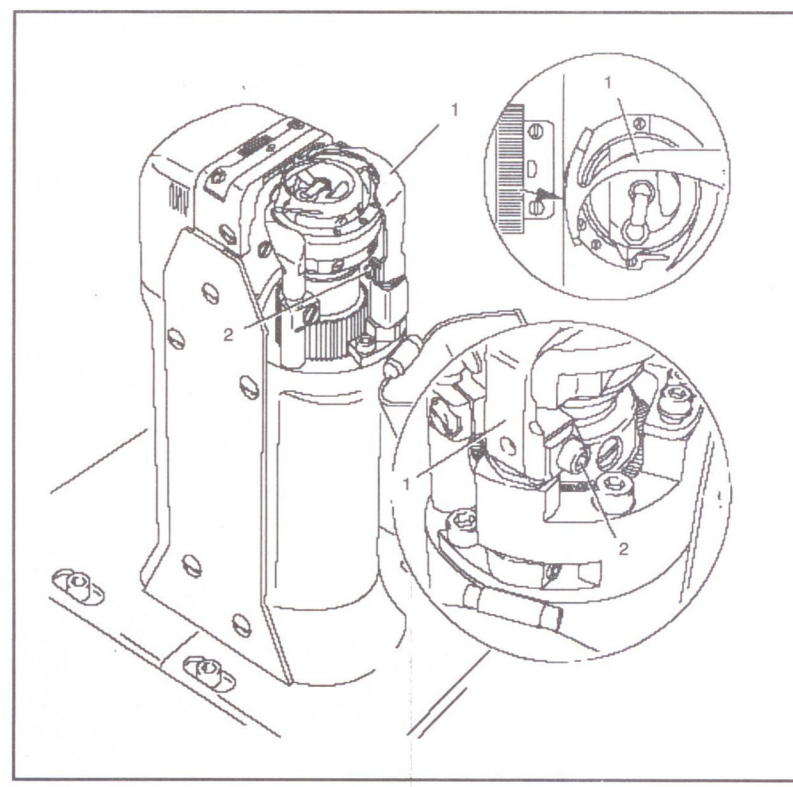
If **Requirement 2** cannot be fulfilled, loosen screw **2** and move the toothed segment **4** by one tooth.



7.04.03 Distance between thread catcher and needle plate

Requirement
During its swivel movement thread catcher **1** should not pass the edge of the needle plate (see arrow).

- Move thread catcher **1** (screws **2**, two screws) parallel to the thread catcher holder in accordance with the **Requirement**.

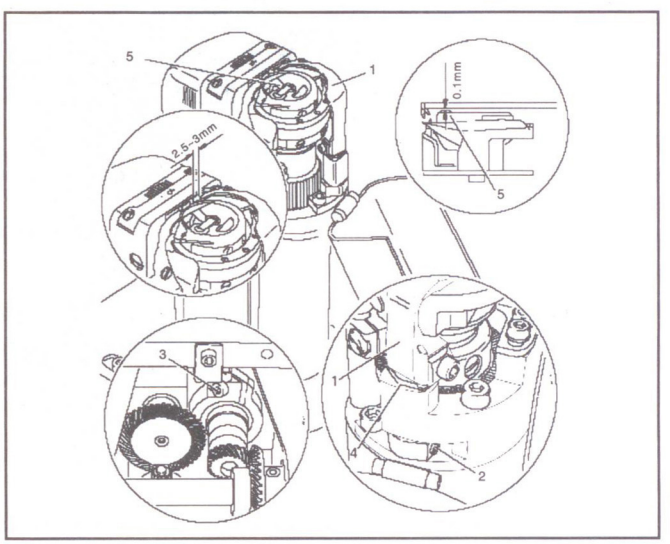


7.04.04 Position of the thread catcher

Requirement
1. the bottom edge of the thread catcher **1** should be at a distance of **0.1 mm** from the positioning finger of the bobbin case **5**.
2. when the thread trimmer is in its neautral position, the rear edge of thread cather should be positioned approx. **2.5 3 mm** behind the edge of the knife.

- Move thread catcher **1** (screw **2**, two screws) in accordance with **Requirement 1**.
- Turn thread cather **1** (screw **3**) in accordance with **Requirement 2.**

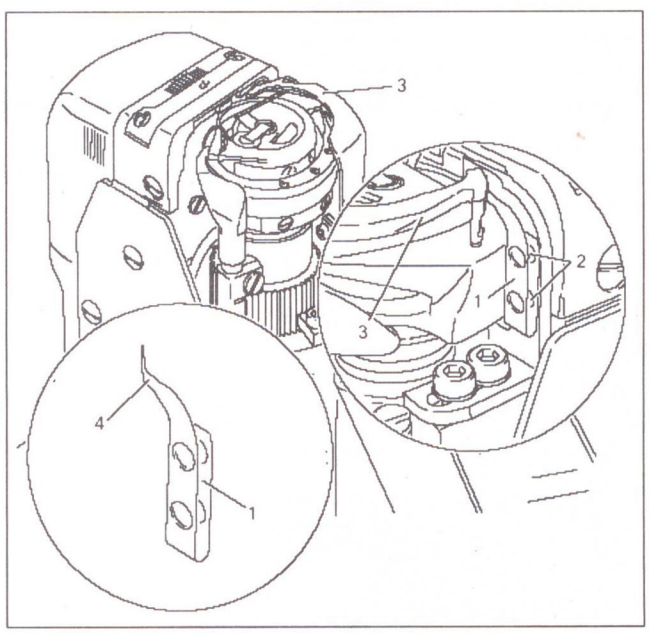
Thread catcher **1** must be parallel to the surface of the thread catcher holder **4**.



7.04.05 Bobbin thread retaining spring

Requiement

1. the bobbin thread clamp spring should be guided reliably in the thread groove of the thread catcher **3**.
2. the tension of the bobbin thread spring clamp should be as low as possible, but the bobbin thread should be reliably after the cutting operation.



- Adjust bobbin thread clamp spring **1** (screw **2**) in accordance with **Requirement 1**.
- Adjust the tension in accordance with **Requirement 2** by bending side **4** of the bobbin thread clamp spring **1**.

Control requirement 1

- Switch off the machine and bring the take-up lever to its bottom dead centre.
- Engage and disengage the thread cather **3** by hand and check **Requirement 1**. Adjust if necessary.

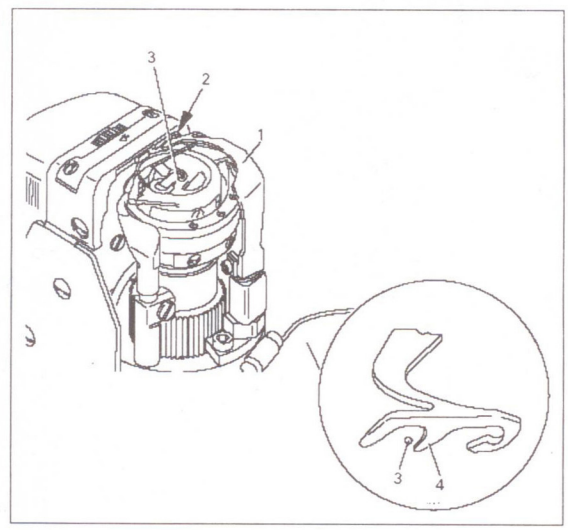
Control requirement 2

- After the thread has been cut, sew a few stitches by turning the balance wheel, checking whether the bobbin thread is drawn out of the bobbin thread clamp spring between the **1st** and **3rd** stitched, if necessary, correct the tension.

7.04.06 Manual cutting test

Requirement

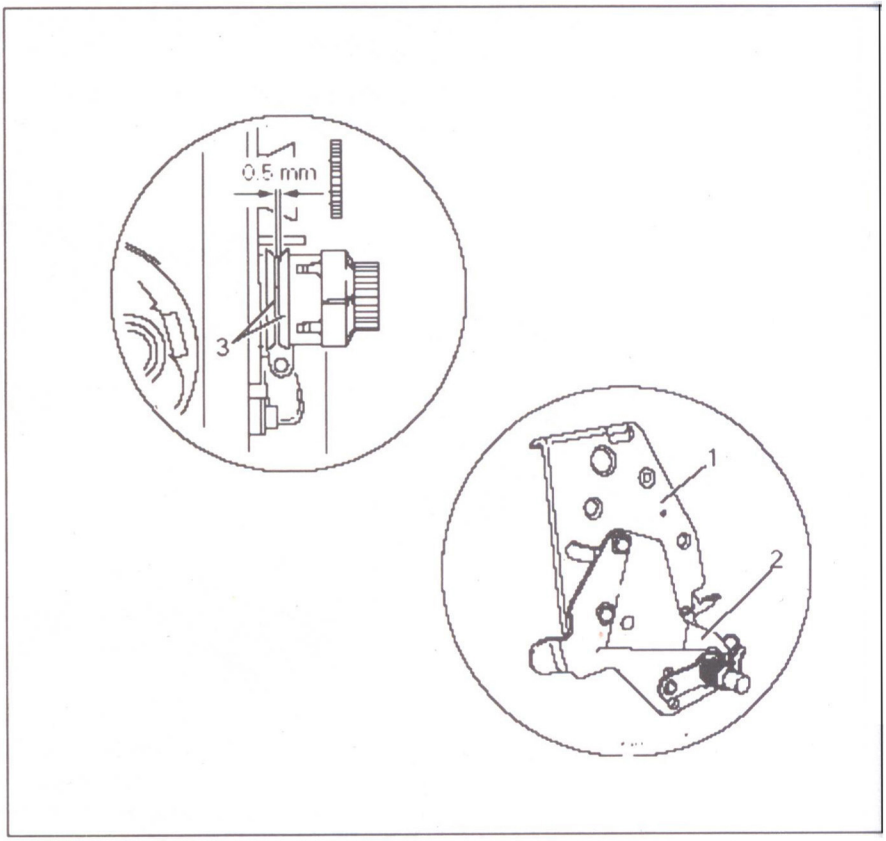
1. when thread catcher **1** is on its forward stroke, it must not carry bobbin thread **3** forward too.
2. when thread catcher **1** is in its front position, bobbin thread **3** must be held reliably by hook **4**.
3. After the trimming action, both the needle thread and the bobbin thread must be perfectly cut and bobbin thread **3** retained.



- Sew a few stitiches.
- Turn off the on/off switch.
- Carry out the cutting operation manually.
- Check **Requirement 1** and **2**, and if necessary readjust thread cather **1** in accordance with **Chapter** 7.04.04 **Position of the thread catcher**.
- Check **Requirement 3**, and if necessary readjust the bobbin thread retaining spring **2** in accordance with **Chapter** 7.04.05 **Bobbin thread retaining spring**.

7.04.07 Releasing the tension

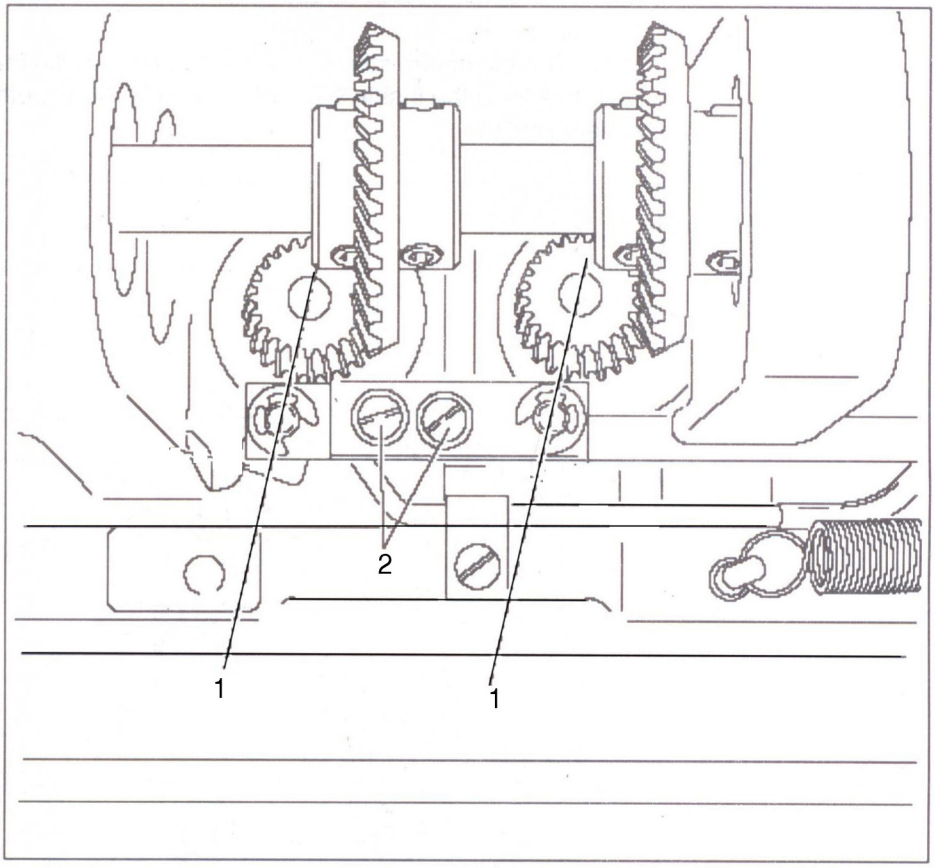
Requirement
When the magnet is activated, tension discs **3** must be at least **0.5 mm** apart.



- Activate the magnet.
- Detach the tension bearing plate **1** and adjust pressure plate **2**.

7.04.08 **Linkage rod** (only for the 8972)

Requirement
When the thread trimmer is in its resting position, the drive levers **1** must be parallel.

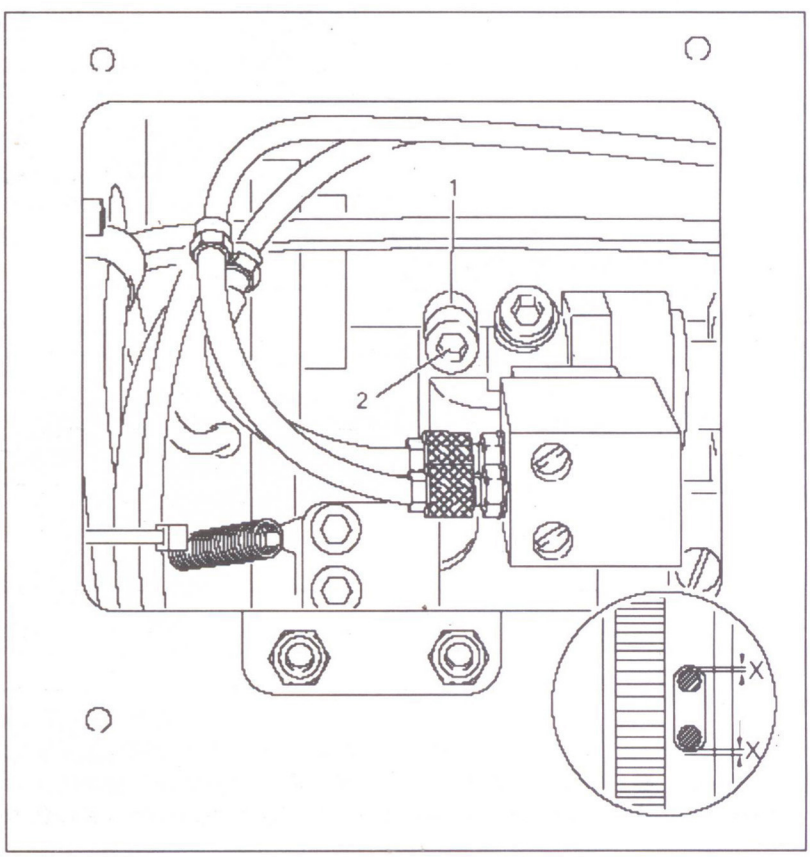


● Adjust drive levers **1** (screw **2**) in accordance with the **Requirement**.

7.05 Adjusting backtacking mechanism

7.05.01 Needle in needle hole (only for pneumatic machine)

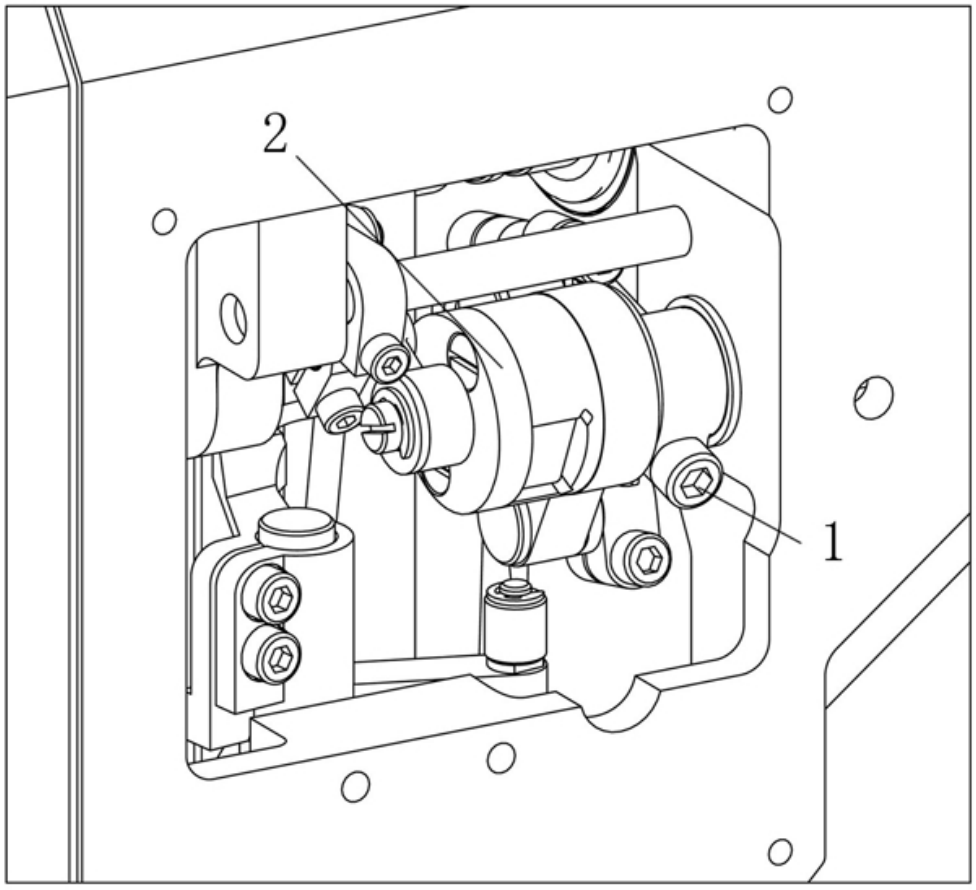
Requirement
When the maximum stitch length is set, the needle must be the same distance from the inside edge of the needle hole, both for forward and reverse stitch.



● Turn crank **1** (screw **2**) according to the **Requirement**,

7.05.02 Needle in needle hole (only for LP 98971)

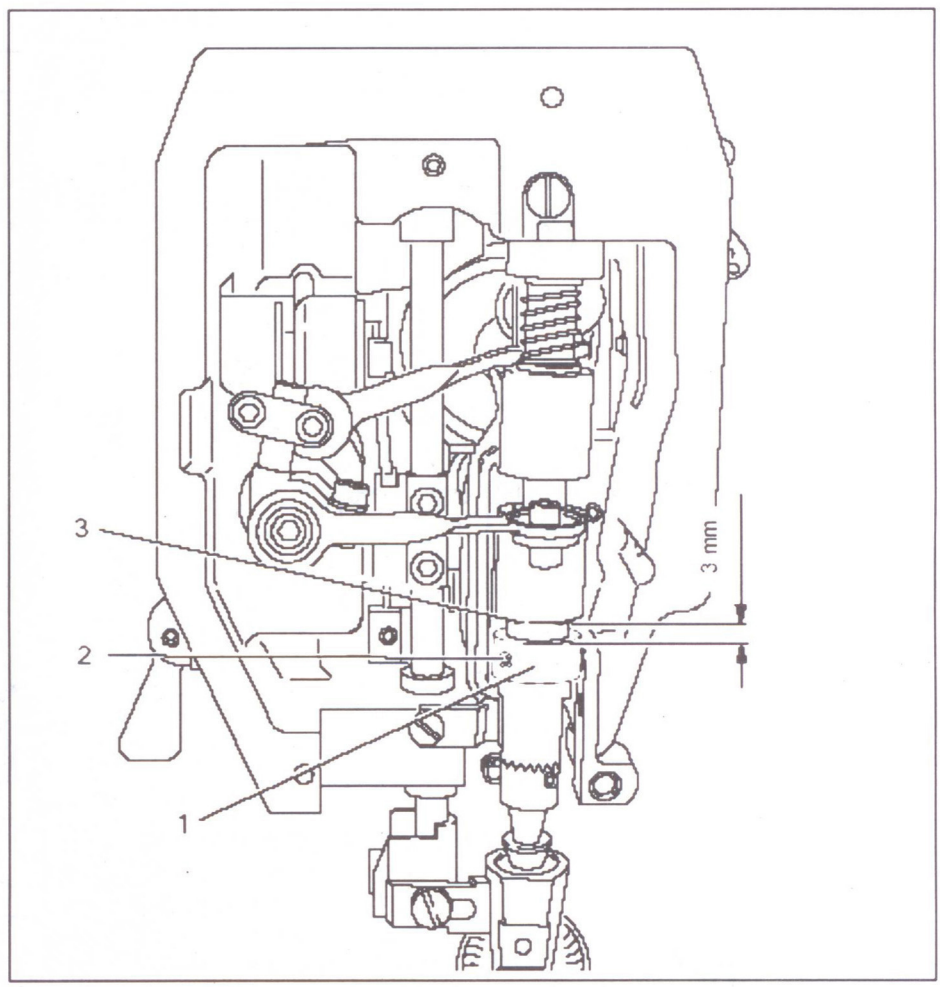
Requirement:
When the maximum stitch length is set, needle bar should at lowest position.
Press back tacking spanner, needle bar should keep quiescent condition.



- Turn adjustment crank 2 (screw 1) according to requirement.

7.05.03 Coupling for roller presser drive

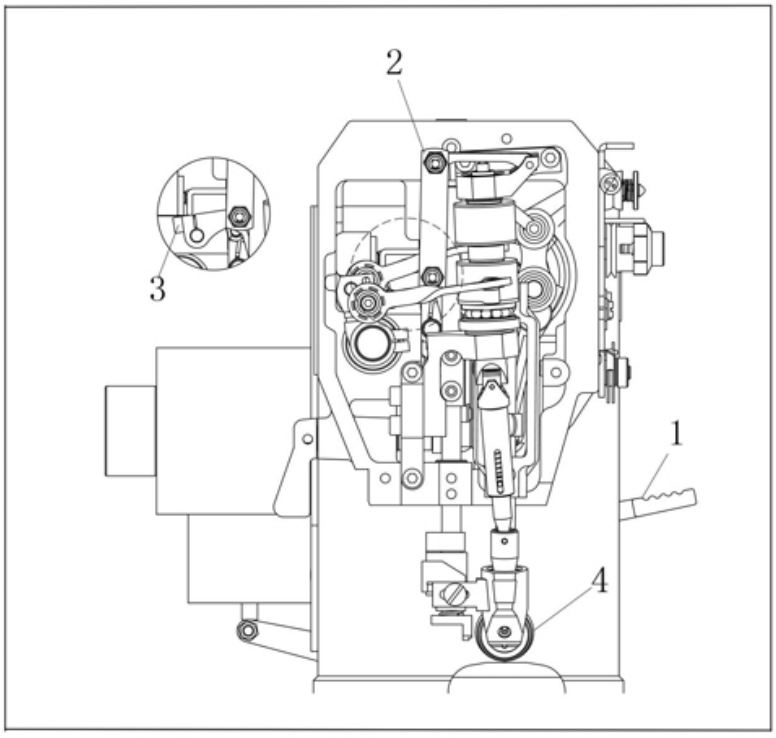
Requirement
There must be a distance of **3 mm** between coupling half **1** and locking disc **3** of the drive mechanism.



- Adjust coupling half **1** (screw **2**) according to the **Requirement**.

7.05.04 Adjustment for roller presser clutch device (only for LP 8971)

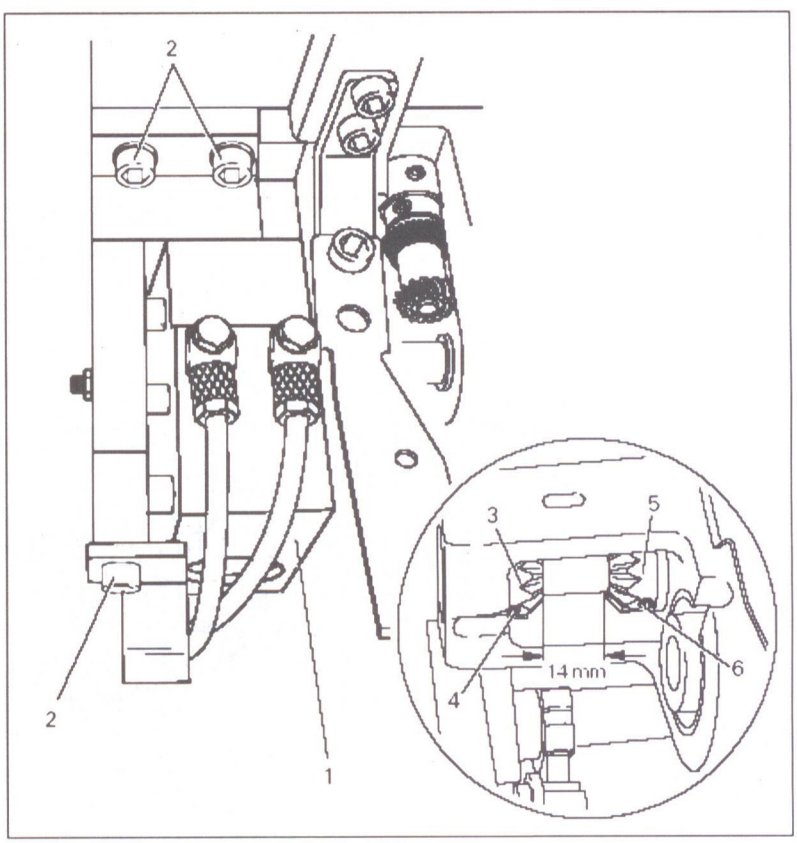
Requirement
1. When sewing forwarders, turn up-feeding wheel by hand, up-feeding wheel by hand 4 just can be rotated in counterclockwise.
2. When sewing forwarders, turn up-feeding wheel by hand, up-feeding wheel by hand 4 can be rotated in counterclockwise and clockwise.



- Press back-tacking spanner 1.
- Adjust connecting pate 2 (screw 3) according to requirement.

7.05.05 Bevel gears for feed wheel drive (only for pneumatic machine)

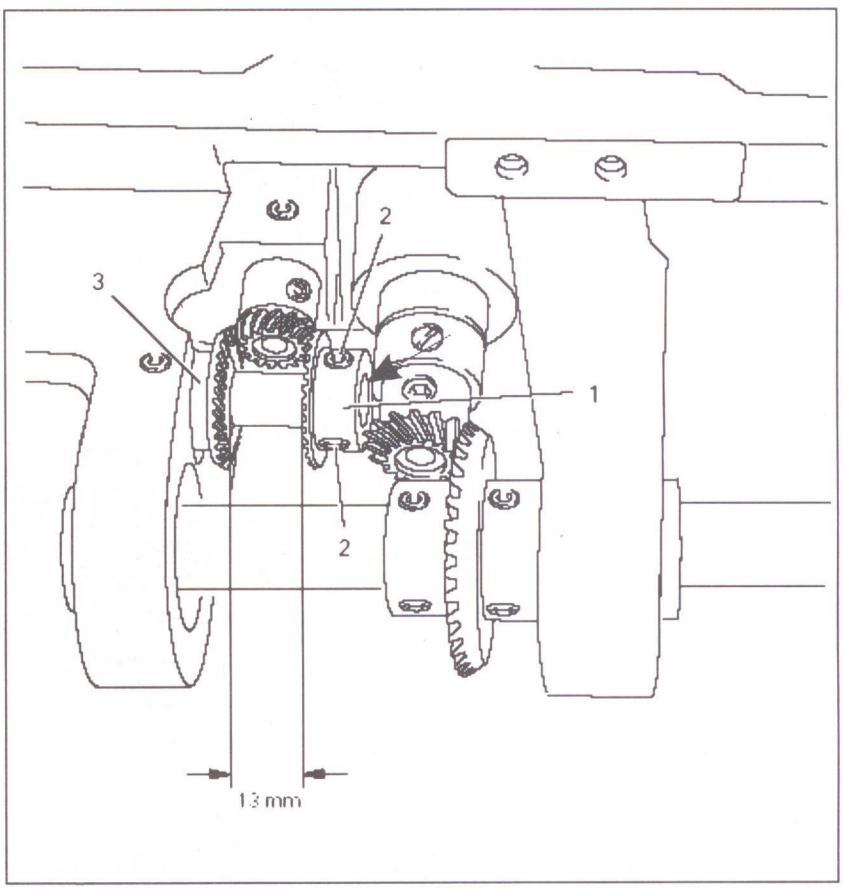
Requirement
1. bevel gear **3** must fit well on the left side.
2. there must be a distance of **14 mm** between bevel gear **3** and bever gear **5**.



- Remove control unit **1** (screws **2**).
- Adjust bevel gear **3** (screw **4**) according to **Requirement 1**.
- Adjust beve gear **5** (screw **6**) according to **Requirement 2**.

7.05.06 Bevel gears for feed wheel drive (on the LP 8971)

Requirement
1. the right side of bevel gear **1** must be flush with its drive shaft (see arrow).
2. there must be a distance of **13 mm** between bevel gear **3** and bevel gear **1**.

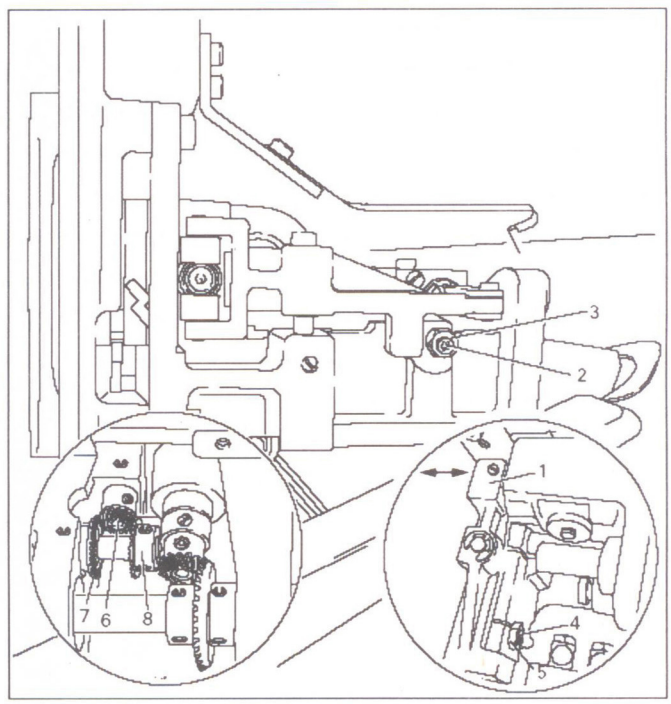


- Adjust bevel gear **1** (screws **2**) according to **Requirement 1**.
- Adjust bevel gear **3** (screws **4**) according to **Requirement 2.**

7.05.07 Bevel gear play (only for pneumatic machine)

Requirement

1. when sewing forwards, there must be a slight play between bevel gear **6** and **7**.
2. When sewing backwards, there must be a slight play between bevel gear **6** and **8**.



- Disconnect air supply of the air filter/lubricator.
- Move unit **1** by hand as far as possible to the right (see arrow).
- Adjust screw **2** (nut **3**) according to **Requirement 1**.
- Move unit **1** by hand as far as possible to the left (see arrow).
- Adjust screw **4** (nut **5**) according to **Requirement 2**.

USER MANUAL FOR STEP ROLLER FEED MACHINE

1: Boot interface

Boot screen icon description:

 Sewing confirmation key. Click this key, the spindle motor and the pendulum motor will find the origin point, and the system will enter the sewing mode.

 Factory setting key. Press and hold this key, the system will enter the factory setting mode. (It will state individually).

 System information key. Long press this key will enter to the system information mode. The information mode includes the system software version for the panel and control box, and the software upgrade function for the panel and control box. Enter to this mode, the system cannot return. If you need to enter other modes, please turn off the power and restart the machine.

2: Sewing interface

The sewing interface is divided into three categories: free sewing, overlapping sewing, and programmed sewing.

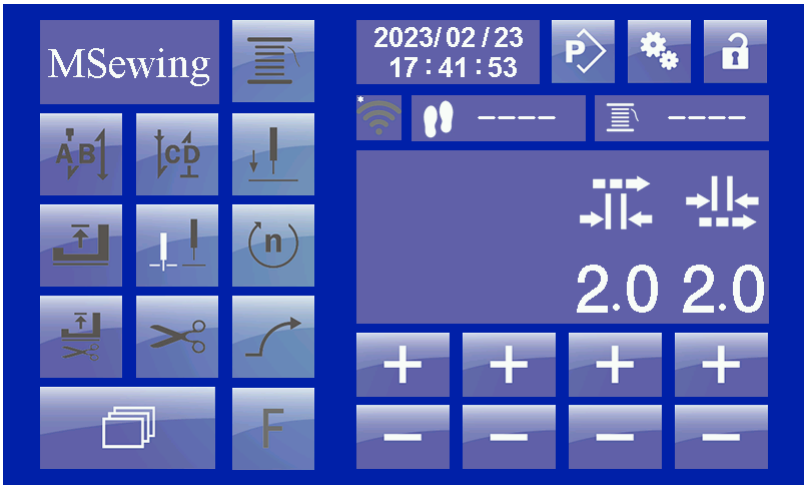


Figure 1: Free sewing interface

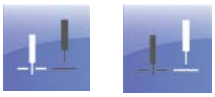
Figure 2: Overlapping sewing interface

Figure 3: Programmed sewing interface

2.1: Key description

Start back-tacking. The white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid.

End back-tacking. The white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid.



The position of the needle when stop. The previous icon indicates that the needle is under the cloth after stop, and the latter icon indicates that the needle is on the cloth after stop.

The presser foot is lift or not when stop the machine. The white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid.

The presser foot is lift or not after trimming stop machine. The white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid. When activated, the presser foot position is in the upper position after stop trimming. When not activated, the presser foot position is in the lower position. The default state is not activated.

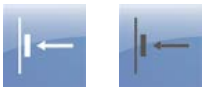
Trimming function. The white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid. When activated, the current sewing section can be trimming. If not activated, the current sewing section cannot be trimming.

Rotational speed setting. The white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid. When activated, click the "scroll key”  , find the speed setting item. Press corresponding the "+" and "-" keys, it can adjust speed. Under the free sewing mode, you can

change speed of "start back-tacking", "end back-tacking" and the current segment. Under the overlapping sewing and programmed sewing it just can change current segment speed.

Back-tacking setting. The white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid. This key is used for programming sewing and pattern editing. In the programming sewing, it is used for instantly change the current sewing segment direction. In the pattern editing, it used for setting current programming segment sewing direction, the reverse direction is activated, the normal sewing direction is not activated.

Needle position setting. the white font icon indicates that this function is activated and the dark gray font icon indicates that this function is invalid. When it need to use needle position function, please setting the spindle parameter P12 “Needle position function” setting value to 1, turn on this function. Then activate the needle position setting key. Needle position angle setting ref to “needle position setting method”, user manual will describe on subsequent chapter.



Knee-control switch function. Under the overlapping sewing and programmed sewing after turn on this function, use knee-control switch can shift sewing segment in turn in the edited pattern.

Back-tacking temporary cancel function. After setting start back-tacking or end back-tacking in current sewing pattern, if current temporary no need to back-tacking then can active this key, and sewing next backing-tacking can cancel. And end back-tacking also can effective.

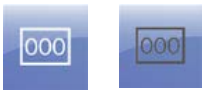
The program interrupt key. This key is used in the programmed sewing state. Under the programmed sewing state press this key, the current sewing program interruption it will not counted, after that tread the pedal machine will be free sewing according to the data of the sewing segment at the time of interruption. Cancel activation, the

program will continue.

Under the free sewing mode activate this key used for coiling bottom thread, at this time the upper and lower rollers not action.

Under the programming sewing activate this key, it will automatic stop machine after sewing is completed for current segment. If not activated, then the editing pattern will continuously sewing until the end of program.

Under the programmed sewing mode activated this key, then tread the pedal machine will be automatic sewing complete pattern.



Under the programmed mode activated this key, and use the “scroll key”  to find the corresponding setting item, then can change the current sewing stitches for sewing segment.

Turn on the soft start function then can activated this key.

Free sewing, overlapping sewing and programmed sewing shift key. At the end of program or at the end of force trimming state, press this key can shift free sewing, overlapping sewing and programmed sewing mode.

Scroll key. Under the sewing mode can use this key to shift between different setting item. But the prerequisite is setting item need to be activated.

Function

Press this key on correspond position, parameter plus.

Press this key in correspond position, parameter minus.

Long press this key, it will enter to pattern editing mode. See the following section for detailed operation.

Long press this key, it will enter to parameter setting mode. See the following section for detailed operation.

Lock and unlock key. The previous icon indicates that the touch screen is locked. At this time, other keys on the touch screen are invalid except the unlock key, after clicking the unlock key, other keys on the touch screen resume function. The latter key icon indicates the unlock key, and in this state, the icons displayed on the LCD panel are all available. After manually clicking the unlock key, the touch screen will be locked. Or the automatic lock time is set in the parameter setting. After the time value is reached, the system will automatically lock.

Record stitches number and setting key. After counting stitches function turn on, this icon will display initial value. Setting method see following chapter.

Bottom thread display and setting key. This icon will display the remaining bottom thread when the bottom thread counter function is turned on. Setting method see the following chapter.

Return key.

2.2: Icon description

Upper roller icon

Lower roller icon

This icon corresponding number indicates current pattern no.

This icon corresponding number indicates current sewing speed.

This icon corresponding number indicates current sewing stitches.

This icon number indicates current sewing segment.

3: Basic operation

3.1 Free sewing

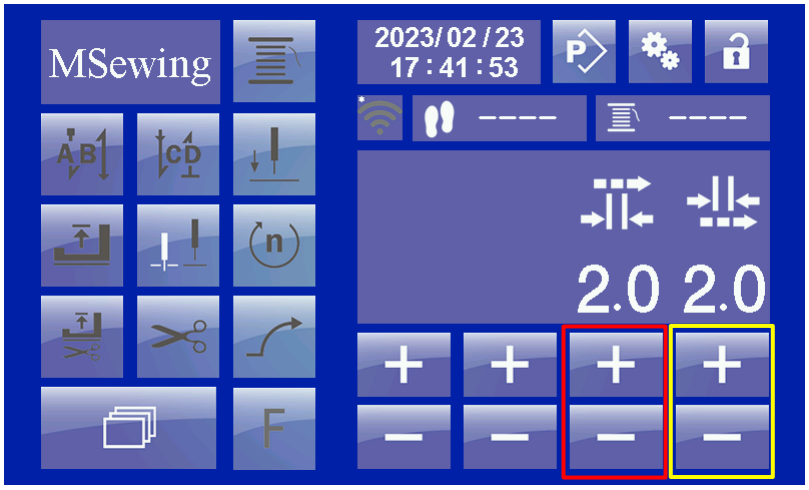


Figure 4: Free sewing interface - Roller value setting

3.1.1 Adjustment of roller value

As shown in the figure above, click or long press "+" in this interface, and the "-" key will change the current value of up and down rollers. The red box indicates the "up roller" adjustment key. The yellow box indicates the scroll wheel adjustment key. The interval between the upper and lower roller values shall not exceed 1.0 mm.

3.1.2 Start back-tacking setting

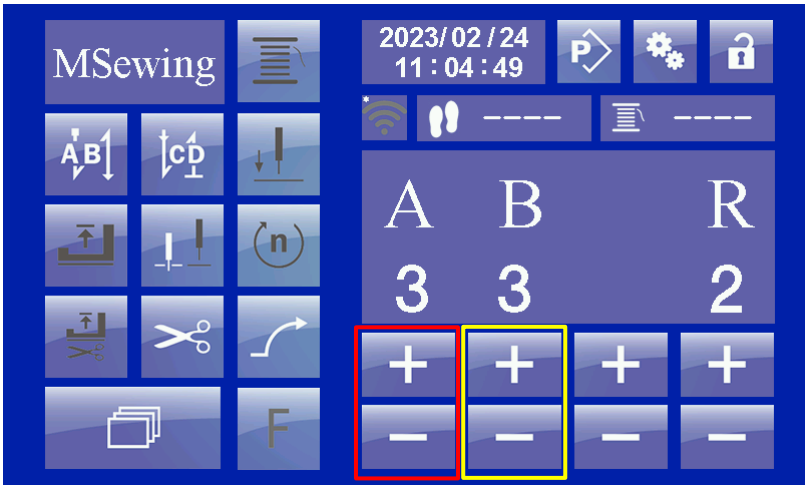


Figure 5: Free sewing screen - Start back-tacking setting

If you need to set up start back-tacking, activate the back-tacking key first  . Then, click the scroll key  , shift settings interface, as shown above. Red box set "A" section, yellow box set "B" section, black box, set repeat number "R". R value is 2 and 4, when 2 indicates sewing AB, and as 4, it means sewing ABAB.

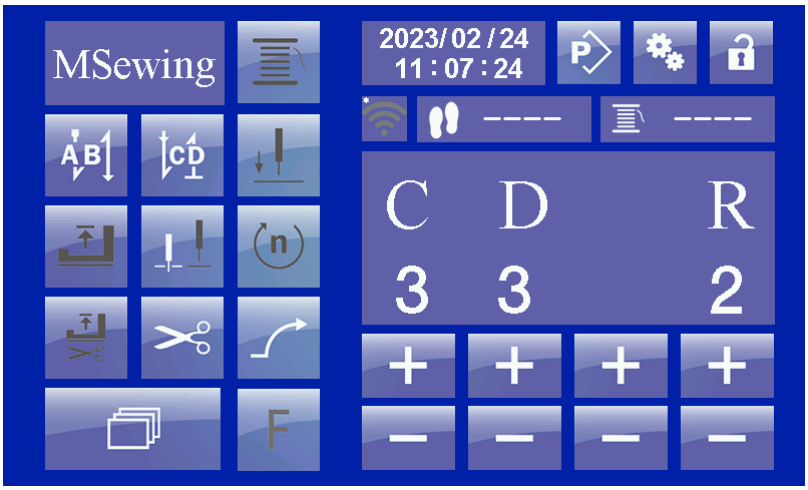


Figure 6: Free sewing interface - End back-tacking setting

If need to set end back-tacking, first to activated back-tacking key  . And then click scroll key  , shift setting interface. Setting method same as the start back-tacking.

3.1.3 Speed setting

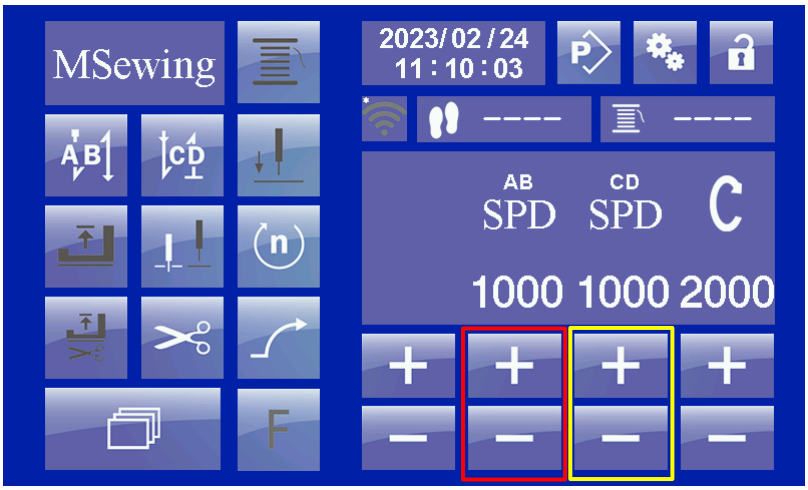


Figure 7: Free sewing interface - Speed setting

If need to setting speed, first to activated speed setting key  . And then click scroll key  shift setting interface. Red box can setting start back-tacking speed, yellow box can setting end back-tacking speed, black box can setting speed of free sewing segment.

3.1.4 Needle position setting

Figure 8: Free sewing interface - Needle position angle setting

If need to use needle position function. First to setting the spindle parameter P12 “needle position function” setting as 1, turn on this function. And then activated needle position setting key  . Long press this key to

enter needle position angle setting interface. As shown in figure 8. Interface current display spindle shaft position, use the hand-wheel to turn the needle bar to requirement position, press “OK” key to save the current setting value, and then press return key  to turn back.

3.2 Overlapping sewing

Figure 9: Overlapping sewing interface - Scroll value setting

If you require to modify the data of one section, then click position of corresponding segment stitches number. At this time corresponding position display black background white word that indicates current segment is selected. After selected one section, the relevant keys and data in this page is belong current segment. As shown in the above figure, “A” segment is selected, at this time right side area display the upper and lower scroll value for “A” segment. Through red box “+”, “-” key, it can add or reduce the scroll value. Stitches and speed setting same as the free sewing, all need to activate the corresponding key then press scroll key to modify.

After 

key is activated, the system stops automatically after complete each segment sewing. Return the pedal to a neutral position and tread sewing position then can continue sewing next segment. If no need then set this key as invalid state 

.

After  key is activated, tread the pedal, system will automatically sewing all pattern till to finished. If no need to set this key as invalid state  .

Figure 10: Overlapping sewing interface- Needle position setting

If need to use needle position function in the overlapping sewing, please activated  key. Press scroll key  shift to needle position setting page, use “+”, “-” key modify to require angle value. As require needle position value can through free sewing needle position angle setting page, by turn over hand-wheel, obverse current spindle shaft position to confirmation.

Noted: each section of the overlapping sewing can be set separately, including speed, stitches count, trimming, needle position, and whether trimming or not. Please confirm the pattern of sewing method and setting is same as your requirement or not before programming, otherwise it will make different sewing effects.

Figure 11: Overlap seam interface - Number of segments setting

How to use overlapping stitches: Section a represents the forward sewing part, and section B represents the backward sewing part. The number under the "SEG" character indicates that a total of several sections are sewn. For example, if SEG is 1, it means only the A segment is sewn, and if it is 2, it means the AB segment is sewn. 3

means ABA. And so on. A total of 8 segments can be set. The arrow in the red box can increase or decrease the number of segments.

3.2 Programmed sewing

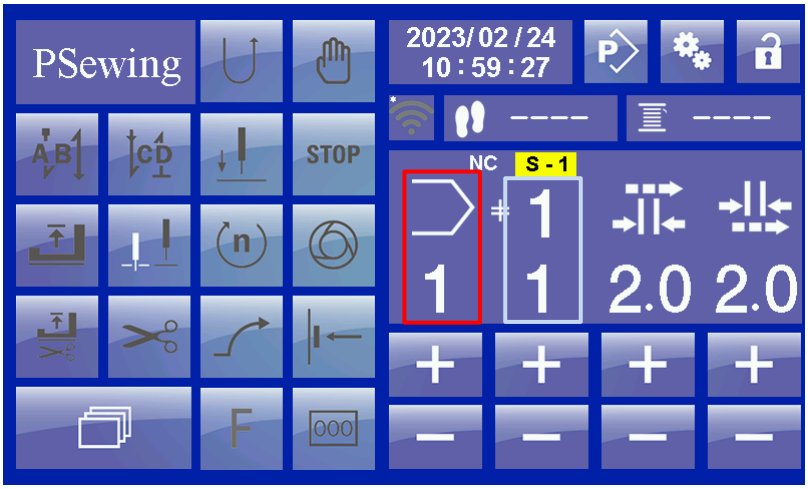


Figure 12: Programmed sewing interface - Description

As shown in the above figure, in the programmed sewing interface red box indicates the current code of pattern. Right side blue box at the top of number indicates current pattern total segment. The below number indicates segment no. of currently displayed on the LCD. Under the programmed sewing finished, it can use in the red box"+" and "-" keys to select different patterns stored in the system. If the pattern selected has more than one segment, it can be selected by "+" and "-" in the blue box. Under the sewing interface, you can modify all the data except adding section, deleting section and circular sewing function. After modification, the parameters will be available.

It need to note the front two pattern in the programmed sewing, the pattern 1 and pattern 2 are fixed pattern can't to delete. Each pattern can add 3 segment. Each segment sewing is free sewing mode, after added multi-segment, it can through sewing machine head key, knee-control switch and LCD panel to shift between multi-segments. Please activated  key if you need to use sewing machine head keys or knee-control switch to shift between segments, otherwise the system will not perform shift action. Multi-segment can setting different stitches number. The following description is use LCD panel to shift different segment method. Such as below figure is no.1 pattern has been added as 3 segment.

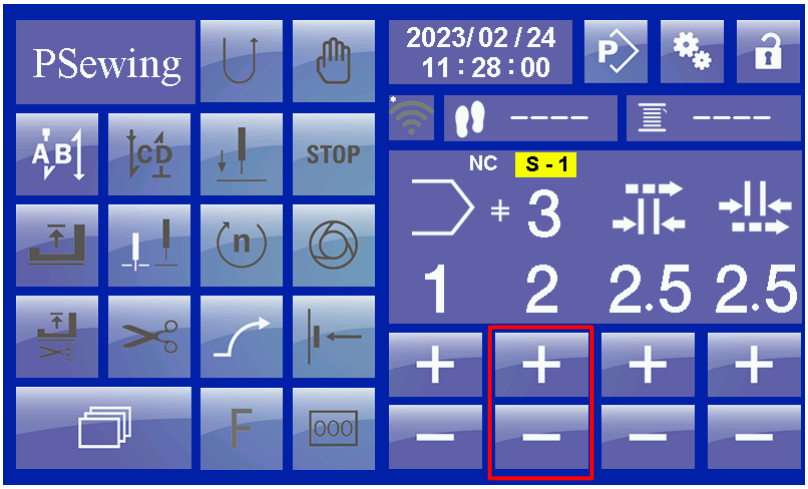


Figure 13: Programmed sewing interface - Multi-segment shift

Use the LCD panel to shift different segment, at first need to activated  key, then use “+”,”-” key in the red box to select require sewing segment.

Figure 14: Programmed sewing interface - Multi-segment shift

As shown in above figure is shift to the second segment interface, segment no is display 2nd segment, after  number and selected segment number is same number 2. Only in this case, the segment shift succeed.

If not activated break key  , after selected segment number, after  number is different with segment number, at this time haven’t shift the pattern data, just shift segment data page, sewing information not transmitted to control box.

Figure 15: Programmed sewing interface - Setting start back-tacking

On the programmed sewing, start back-tacking, end back-tacking setting method is similar as free sewing. The different is under programmed modem, it can't modify speed and repeat times for start back-tacking and end back-tacking. If modified this information need to enter program editing mode select corresponding pattern to edit.

4. Parameter setting

Long press  key, enter to parameter setting interface.

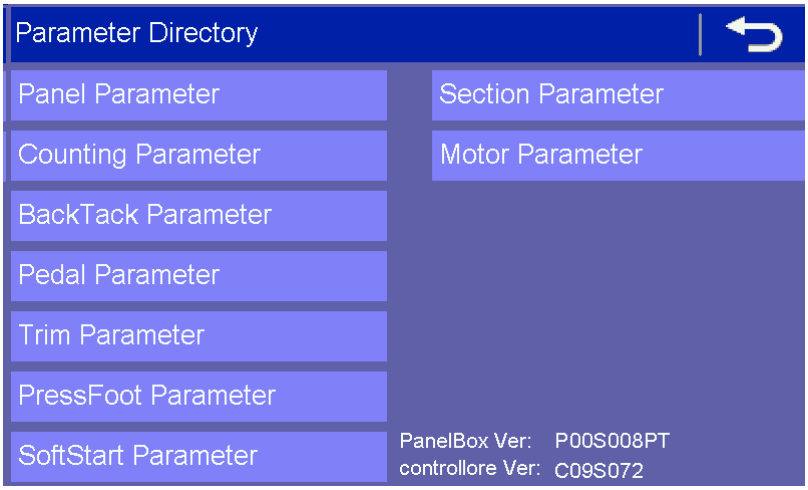


Figure 16: Parameter selection interface

Parameter selection interface bottom right display software version information of operation panel and control box.

Take the 1st parameter as an example: after click "panel parameter", enter to panel parameter setting interface.

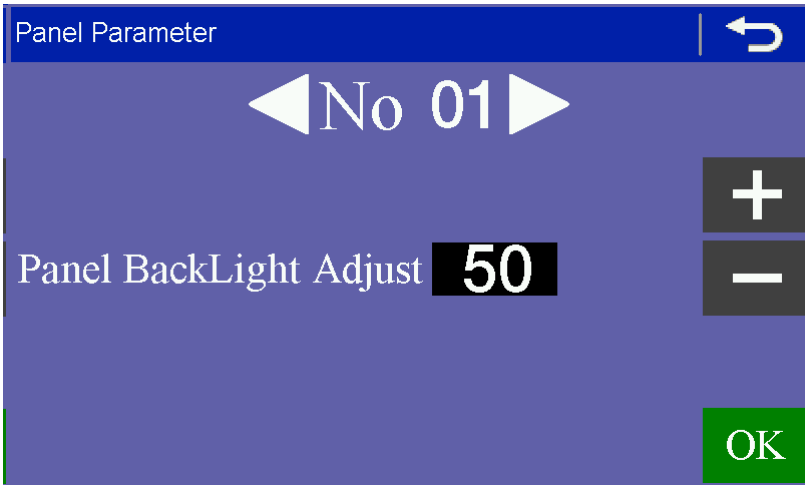


Figure 17: Parameter setting interface

As shown above figure, 

click white key for turn left or turn right, interface will turn to previous or latter parameter setting interface, at the same time after No. Number will be change accordingly. After select the parameter item which want to modify, use right side "+" "-" key to modify the parameter value. After modified, click "OK" key to save. If not click "OK" key then to shift parameter item or exit setting, the parameter will not to save. Other parameter setting method same as this.

5. Program editing

After long press  key, it will enter program editing catalogue page.

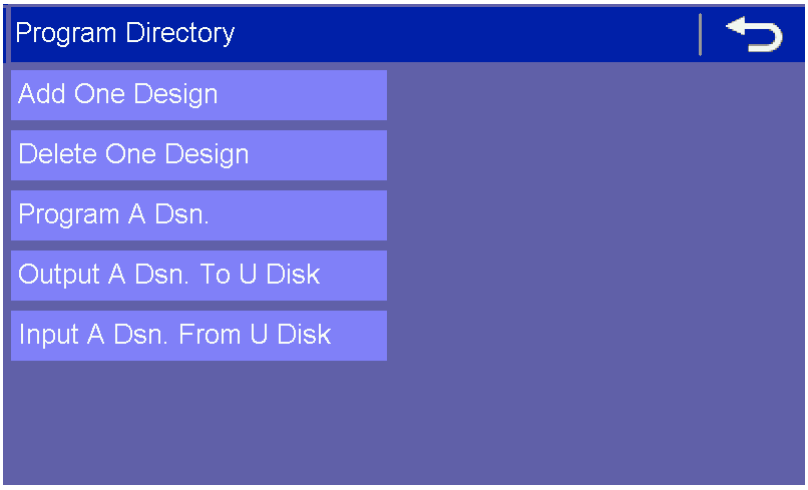


Figure 18: Program editing catalogue

5.1 Added pattern

Click "added pattern" item, display interface.

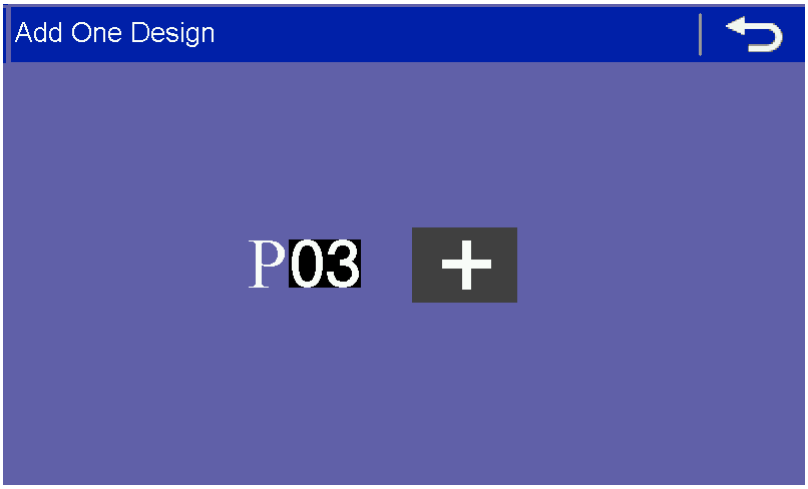


Figure 19: Added pattern

As shown above figure, in the P04 the 04 indicates it will add pattern code, click right side “+” key will added 4th pattern. After complete added, waiting add pattern number will automatic add 1 to became next waiting for add pattern, if no need to continue add then press return key to back.

5.2 Delete pattern

Click “delete pattern” item, display interface

Figure 20: Delete pattern

Use right “+”, “-”key to select waiting delete pattern. Then press  key to delete pattern. No.1 and No.2 pattern can’t delete.

5.3 Pattern editing

Click “select will need to edit pattern no” item, display interface.

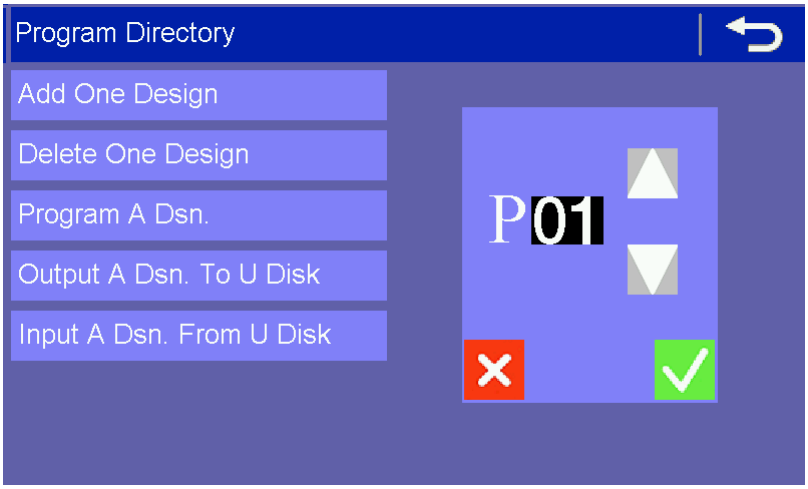


Figure 21: Select waiting editing pattern

Press  key to select need to editing pattern number. After select press  key, to enter editing interface.

5.3.1 Editing method

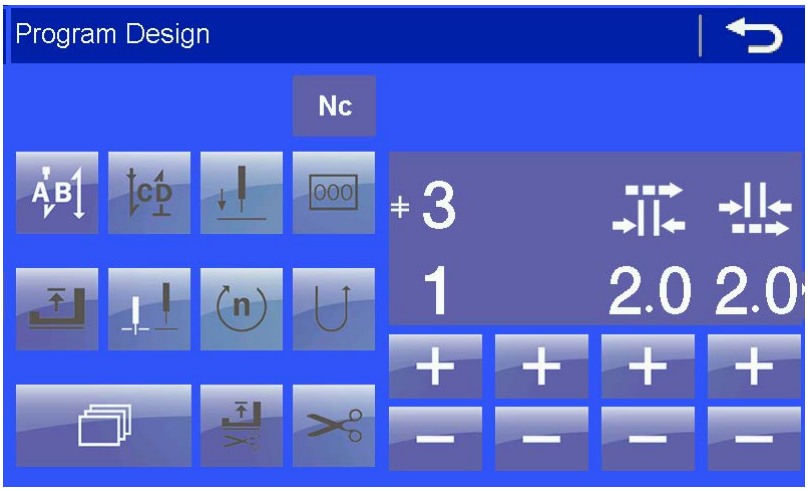


Figure 22: Pattern editing method

Pattern editing method, it is similar with previous chapter introduction setting method in the sewing interface. At first it need to consider the pattern require how many segment. If more than 1 segment, then need to add the segment. At this time click  key to shift segment added, delete page.

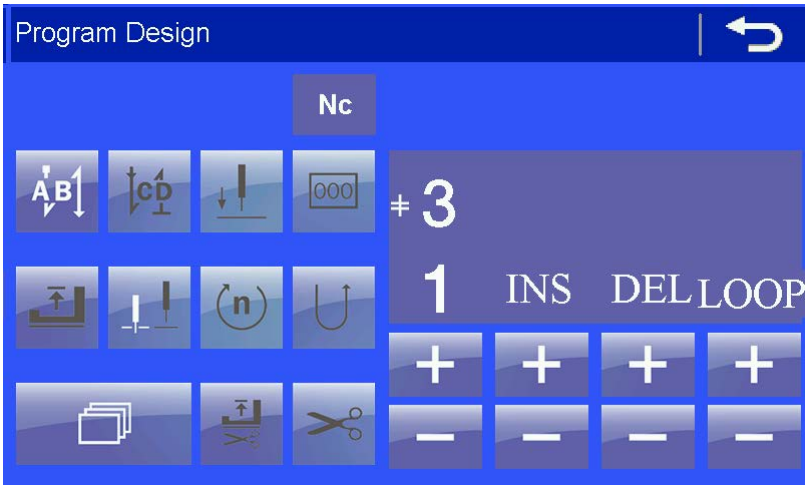
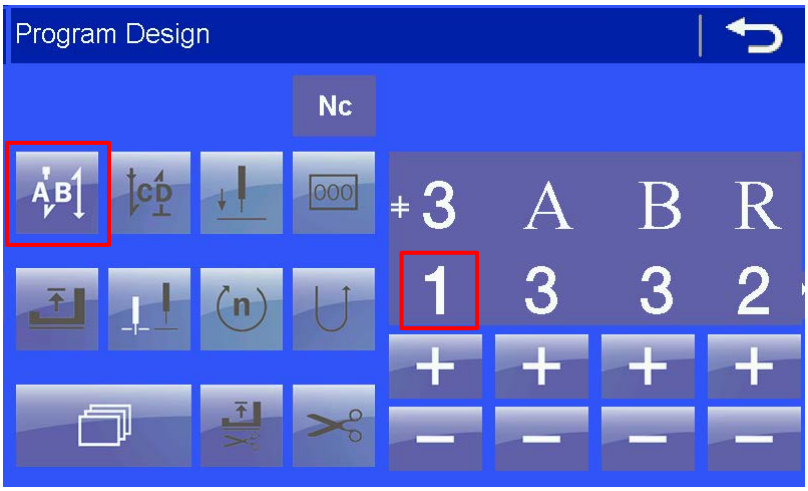


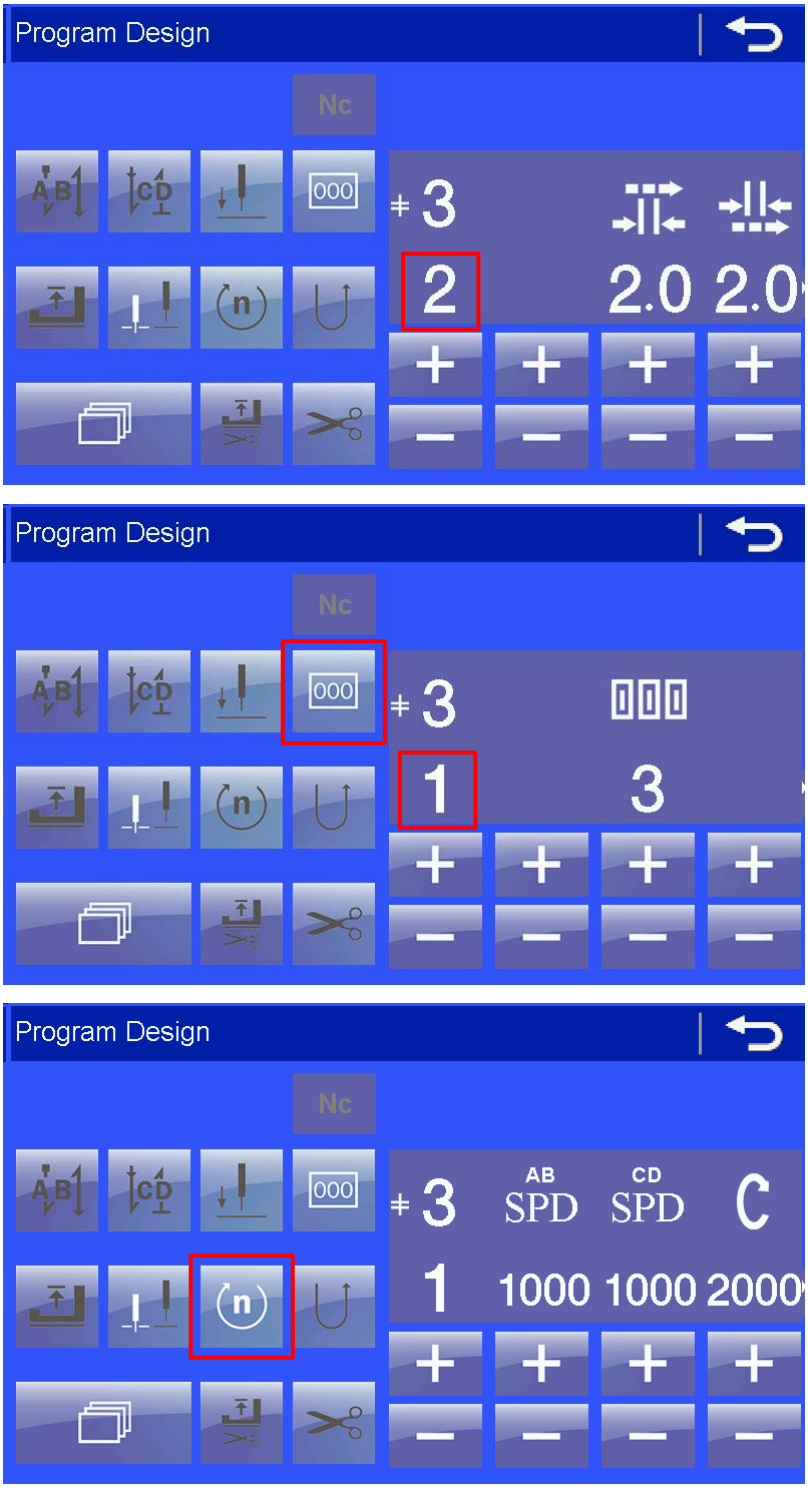
Figure 23: Adding delete segment

Press “+”, “-” key white font below of the “add segment”, delete segment. Press “+”, “-” key white font below of the “cycle sewing”, the pattern setting as the cycle sewing mode. **Noted: only after the segment have been set then can setting cycle sewing.**

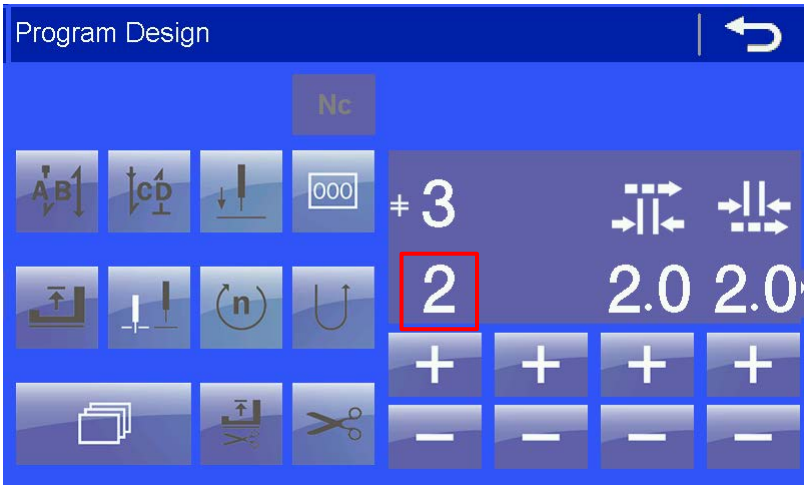
After the segment have been set, press left “+”， “-”key below of the segment select need to editing segment.

For example: editing for one pattern of 3 segment, the one fist segment 6 stitches, the stitches length 3mm, start have start back-tacking, segment speed 2000. The second segment 8 stitches, the stitches length 3.5mm, segment speed 2100. The third segment 10 stitches, stitches length 4.0mm, segment speed 2200. Trimming and foot presser lift after end back-tacking.





Shift between each setting use scroll key  . The 2nd segment and 3rd segment setting method is same as 1st segment.



It need to save pattern after pattern editing setting.

5.4 Pattern output to USB flash drive

Export the edited pattern on the current machine to the U disk. This operation can easily input the edited pattern to other unedited machines. The patterns that can be output start from the pattern number 3 on this machine to the maximum pattern number that has been edited. If no pattern is added, it cannot be output.

5.5 U disk pattern input to memory

Put the pattern In the U disk into the memory of the current machine. The pattern numbers will be sorted from the patterns that already exist on this machine.

Machine parameter description

1Panel parameter

1.1 Panel backlight adjust: 30%~100%. Default: 50%

1.2 Panel Lock Time Adjust: 120 Sec, 180 Sec, 240 Sec, 300 Sec, OFF. Default: 120 Sec.

1.3 Tilt switch enable: ON/OFF. Default: ON.

1.4 Large stitch length disable: ON/OFF. Default: ON. (The stitch length can be adjusted to 7mm after closing)

2 Statistics function

2.1 Thread bobbin counter enable: ON/OFF. Default: OFF

2.2 Piecework counter enable: ON/OFF. Default: OFF

2.3 Machine lubrication tips enable: ON/OFF. Default: OFF

2.4 Bobbin thread unit value: 200~9999. Default: 3000

2.5 Piecework unit value: 0~9999. Default: 0.

2.6 Lubrication tips value: 50~1000. Default: 100 Unit: Hour

3 Tacking and back-tacking parameter

3.1 Start back-tacking speed: 700~1500. Default: 1500 Unit: Rpm

3.2 End back-tacking speed: 700~1500. Default: 1500 Unit: Rpm

3.3 Sewing back-tacking speed: 700~1500. Default: 1500 Unit: Rpm

3.4 Back-tacking break mode: 0~1. Default: 0

3.5 Action mode after start back-tacking: 0~2. Default: 0

3.6 Back-tacking speed mode 0~1. Default: 0

0: Sewing at set speed

1: Sewing at the pedal speed

3.7 Back-tacking start angle: 176~186. Default: 180

4 Pedal parameter

4.1 Pedal speed curve 3 Adjustment: 1~10. Default: 8

4.2 Pedal speed curve: 0~3. Default: 3

4.3 Pedal judgment time: 0~200. Default: 40

5 Thread trimming parameter

5.1 Trim speed: 20~400. Default: 200

5.2 Trim stage: 0~1. Default: 0

5.3 Trim start angle: 100~250. Default: 140

5.4 Trim end angle: 0~80. Default: 40

5.5 Thread tension start angle: 0~359. Default: 5

5.6 Thread tension end angle: 0~359. Default: 48

5.7 Trim solenoid duty: 25~100. Default: 80

5.8 Trim mode: Normal trim, Lockstitch trim. Default: Normal trim

5.9 Lockstitch trim direction: Forward, Backward. Default: Forward

5.10 Lockstitch trim stitch length: 1~10. Default: 3

5.11 Lockstitch trim stitch numbers: 1~3. Default: 1

5.12 First sew tension enable: ON/OFF. Default: OFF

5.13 First sew tension end angle: 100~359. Default: 200

5.14 Tension solenoid duty: 5~100. Default: 100

6 Presser foot parameter

6.1 Enable roller presser: ON/OFF. Default: ON

6.2 Roller presser slow down enable：ON/OFF. Default: OFF

6.3 Sew start delay time when presser down: 0~25. Default: 8

6.4 Presser lift holding time: 3~15. Default: 8

6.5 Presser solenoid duty: 10~40. Default: 20

6.6 Presser slowdown time: 20~200. Default: 50

7 Soft start parameter

7.1 Soft start enable: ON/OFF. Default: OFF

7.2 Soft start stitch numbers: 1~99. Default: 1

7.3 Soft start first stitch speed: 100~1800. Default: 600

7.4 Soft start second stitch speed: 100~2000. Default: 1000

7.5 Speed after the third stitch: 100~2200. Default: 1500

8 Segment sewing parameter

8.1 Up roller size:

(1): 25/70 D30

(2): 18/52 D30

(3): 20/58 D26

(4): 20/58 D28

(5): 20/84 D36

(6): 20/68 D28

(7): 23/70 D30

8.2 Auto run enable: 0~1. Default: 0

8.3 Auto run time: 2~6. Default: 3

8.4 Auto run stop time: 2~4. Default: 2

8.5 Feed angle: 95~115. Default: 100

8.6 Differential gap: 10~25. Default: 10

9 Main shaft parameter

9.1 Maximum speed: 1000~3000. Default: 2500

9.2 Minimum speed: 1000~3000. Default: 200

9.3 Positioning speed: 1000~3000. Default: 100

9.4 Accelerate factor: 1~100. Default: 20

9.5 Decelerate factor: 1~100. Default: 20

9.6 Motor boost enable: ON/OFF. Default: OFF

9.7 Motor boost setting: 1~15. Default: 1

9.8 Shaft motor reversal enable after thread trimming: ON/OFF. Default: OFF

9.9 Shaft motor reversal angle after thread trimming: 10~40. Default: 10

9.10 Shaft motor hold function: 0~2. Default: 0

9.11 Prevent the thread from falling out of the needle enable: ON/OFF. Default: OFF

9.12 Stitch length of prevent the thread from falling out of the needle: 1~10. Default: 3

9.13 Stitch numbers of prevent the thread from falling out of the needle: 1~ 3. Default: 1

9.14 Stitch placement enable: ON/OFF. Default: OFF

9.15 Patch stitch mode: 0~1. Default: 0

9.16 Angle of needle under cloth: 80~150. Default: 102

9.17 Angle of needle bar low position: 100~200. Default: 130

9.18 Angle of needle bar high position: 0~100. Default: 60

Error code list

1 Control box error code

3100 Software unauthorized

3101 Parameter out of range

Reinitialize parameter.

3110 Pedal setting error / or pedal malfunction

Pedal AD value is not correct.

3111 Encoder or datum point sensor malfunction or motor malfunction

Please check the spindle shaft is stuck or not, or encoder malfunction.

3112 Date error

Date process error, reset sewing parameter.

3113 Zero-position sensor error

Please check the spindle shaft is stuck or not, or encoder malfunction.

3114 Sewing machine head open

Machine head is turn over or machine head sensor angle of inclination malfunction.

3118 Solenoid malfunction

Please check the solenoid is short-circuit or not.

3119 spindle shaft abnormal

Spindle shaft stuck or encoder abnormal.

3120 Pendulum motor abnormal

Pendulum stuck or other caused can’t rotate.

3121 Communication malfunction

It not received the panel return data.

3122 Communicate data verification error

The data received was wrong

3123 Spindle shaft drive abnormal

Spindle motor over-current.

3124 Pendulum drive abnormal

Pendulum motor over-current.

3125 Pattern transfer error

Pattern transfer error, communicate problem.

3126 Parameter transfer error

Parameter transfer error, communicate problem.

3127 Knee-control shift sewing failure

The panel no response when shift sewing segment.

3128 Pendulum position abnormal

The pendulum position is out of the normal range.

3129 Over-voltage

Supply voltage is too high.

3130 Under-voltage

Supply voltage is too low.

2 Panel error code

2.1 The control box can’t find original point

Spindle shaft or pendulum can’t find the original point. At first please check the spindle is running or not then check the pendulum.

Sewing with 2 different stitch lengths and retrieval via knee switch:

» Go to „PSewing“
» Press „Open Folder“
» Press „P“ long
» Press „Program A Dsn“
» Now select the desired program number with the + button
» Confirm with the green tick
» Press „Open Folder“ again
» For „INS“ enter the desired number of seam sections and confirm with „Open Folder“
» For seam section 1, please enter the stitch length for the feed wheel and roller presser
» Now use the left + - buttons to select the 2nd seam section
» For seam section 2, please enter the stitch length for the feed wheel and roller presser
» Activate thread trimming
» Go to the „Return“ button at the top right
» You will be asked to “Save Design?” And confirm with “YES”.
» Go to the „Return“ button at the top right
» Now activate the knee lever with the button

You can now call up between the different stitch lengths with the knee switch or the button on the machine head.

GLOBAL

Our experience. Your success

POST BED COMPOUND FEED SEWING MACHINE WITH STEP MOTOR

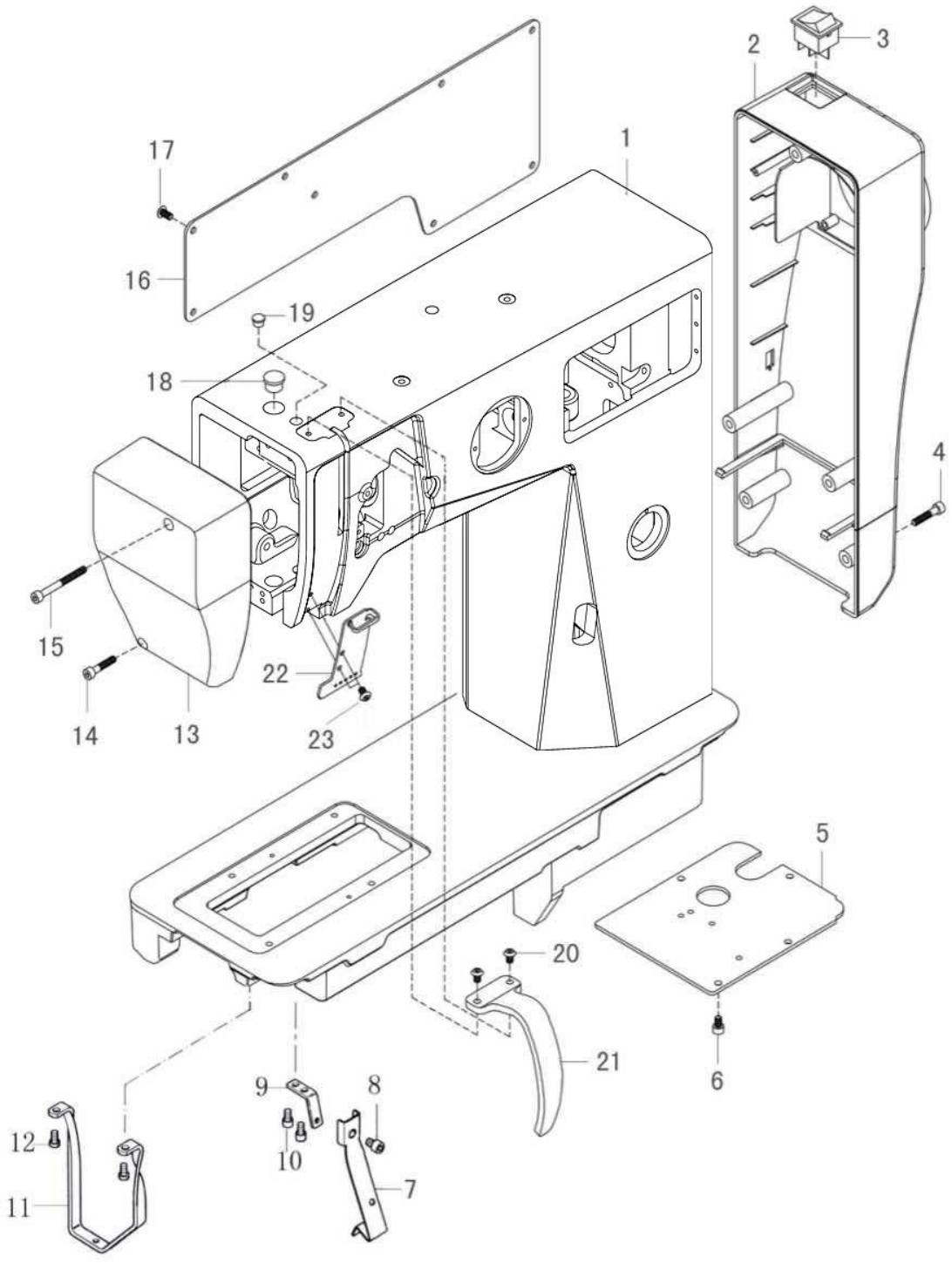
PARTS MANUAL

CONTENT 目录

A. Arm bed and its accessories

No.	Part No.	Name	1NEEDLE	2 NEEDLE
1	7.02.01.068	Arm bed	1	1
2	7.02.16.565	Back cover	1	1
3		Power switch	1	1
4	7.02.15.096	Back cover screw	3	3
5	7.02.11.482	Lower plate	1	1
6	7.02.15.044	Lower plate screw	3	3
7	7.02.11.483	Safety guard cover	1	1
8	7.02.15.964	Safety guard cover screw	1	1
9	7.02.11.484	Fixed plate	1	1
10	7.02.15.444	Fixed plate screw	2	2
11	7.02.13.370	Bracket	1	
12	7.02.15.055	Bracket screw	2	2
13	7.02.16.563	Face plate	1	1
14	7.02.15.731	Face plate screw（Lower）	1	1
15	7.02.15.1075	Face plate screw（Upper）	1	1
16	7.02.11.624	Back cover plate	1	1
17	7.02.15.960	Back cover plate screw	7	7
18	7.02.16.408	Oil cap	1	1
19	7.02.16.407	Oil cap	1	1
20	7.02.15.960	Thread take-up lever guard cover screw	2	2
21	7.02.16.418	Thread take-up lever guard cover	1	1
22	7.02.01.374	Thread guide	1	1
23	7.02.15.973	Screw	2	2

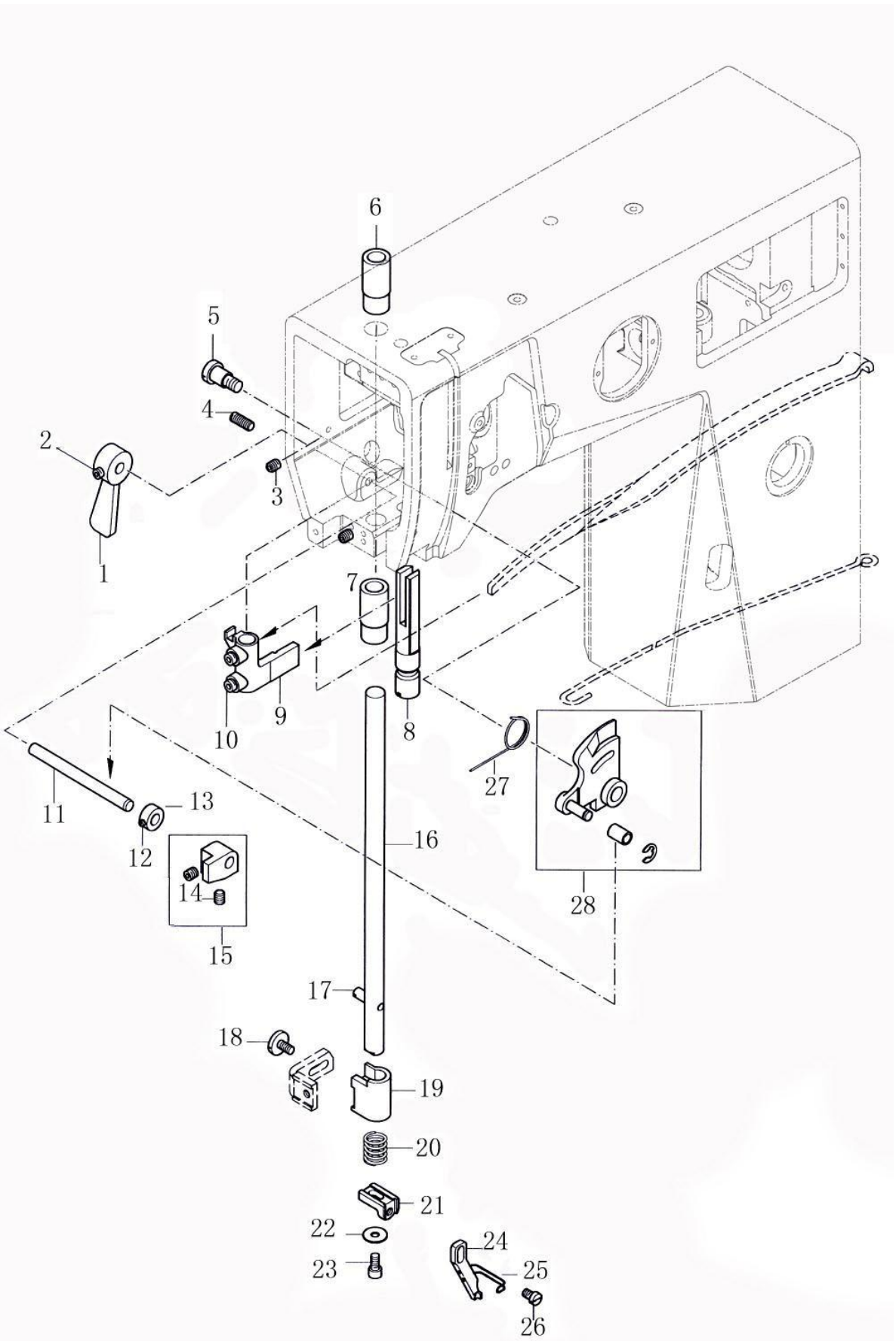
A. Arm bed and its accessories



B. Presser bar parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.05.01101	Presser foot lifting lever	1	1
2	7.02.15.056	Screw	1	1
3	7.02.15.056	Screw	2	2
4	7.02.15.057	Set screw	1	1
5	7.02.15.025	Screw	1	1
6	7.02.08.032	Bushing（Upper）	1	1
7	7.02.08.033	Bushing（Lower）	1	1
8	7.02.03.009	Guide rail bar	1	1
9	7.02.08.007	Presser bar fixed bracket	1	1
10	7.02.15.050	Screw	2	2
11	7.02.03.420	Presser bar lifter shaft	1	1
12	7.02.15.047	Screw M4X4	1	1
13	7.02.09.117	Collar	1	1
14	7.02.15.056	Screw	2	2
15	7.02.12.280	Lift block	1	1
16	7.02.03.421	Presser bar	1	1
17	7.02.10.457	Stopper pin	1	1
18	7.02.15.011	Screw	1	1
19	7.02.08.470	Roller presser bracket	1	1
20	7.02.17.408	Spring	1	1
21	7.02.05.009	Tailstock	1	1
22	7.02.18.071	Washer		
23	7.02.15.006	Screw	1	1
24	7.02.02.008	Small presser foot	1	1
25	7.02.17.009	Safety spring	1	1
26	7.02.15.026	Screw	1	1
27	7.02.17.012	Spring	1	1
28	7.02.01.006	Thread tension regulator assy	1	1

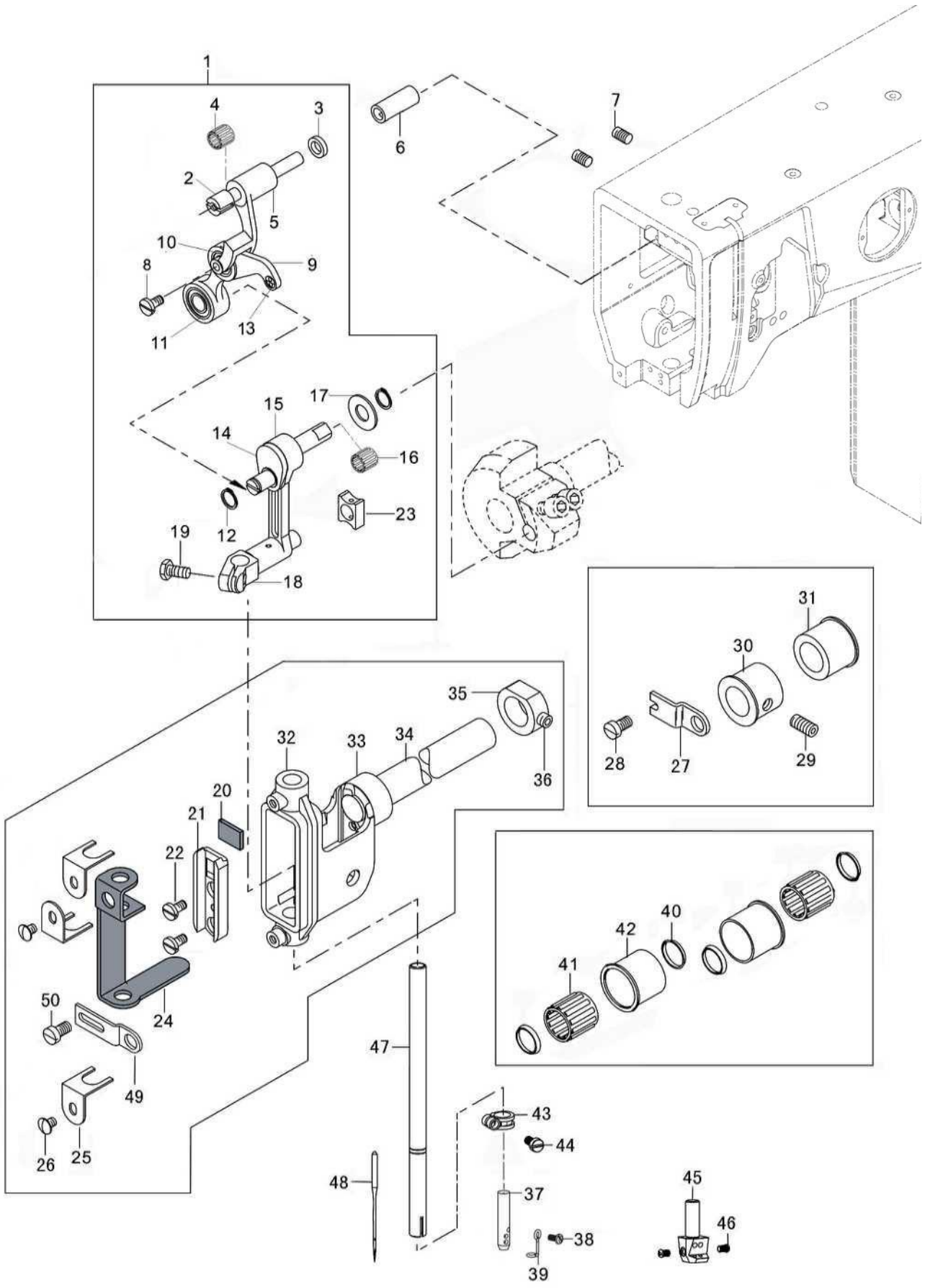
B. Presser bar parts



C. Needle bar holder parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.01.353	Thread take-up assy.	1	1
2	7.02.10.462	Thread take-up fixed pin	1	1
3	7.02.09.003	Plastic stop ring	2	2
4	7.02.04.005	Needle bearing	2	2
5	7.02.05.003	Thread take-up holder	1	1
6	7.02.08.476	Thread take-up shaft bushing	1	1
7	7.02.15.049	Set screw	2	2
8	7.02.15.065	Screw	1	1
9	7.02.05.004	Thread take-up lever	1	1
10	7.02.04.004	Bearing	1	1
11	7.02.04.016	Bearing	2	2
12	7.02.18.030	Elastic retaining ring	2	2
13		Thread path	1	1
14	7.02.06.001	Thread take-up crank	1	1
15	7.02.05.005	Needle bar connector	1	1
16	7.02.04.006	Needle bearing	1	1
17	7.02.18.009	Washer	2	2
18	7.02.05.006	Needle bar fixer	1	1
19	7.02.15.066	Screw	1	1
20	7.02.16.011	Oil felt	1	1
21	7.02.12.001	Needle bar connector guide slot	1	1
22	7.02.15.021	Guide slot screw	2	2
23	7.02.12.002	Needle bar guide slide block	1	1
24	7.02.16.012	Oil felt	1	1
25	7.02.17.005	Oil felt holder	3	3
26	7.02.15.022	Oil felt pressing plate screw	2	2
27	7.02.17.001	Fixed plate of needle bar holder		1
28	7.02.15.964	Fixed plate screw		2
29	7.02.15.064	Set screw		1
30	7.02.08.025	Bushing		1
31	7.02.08.026	Bushing		1
32	7.02.13.522	Needle bar holder	1	1
33		Pin	1	1
34		Main shaft	1	1
35	7.02.09.119	Collar	1	1
36	7.02.15.054	Set screw	1	1
37	7.02.02.399	Needle holder	1	
38	7.02.15.862	Needle clamp screw	1	
39	7.02.14.112	Needle bar thread stand	1	
40	7.02.18.002	Disk type washer	4	
41	7.02.04.010	Needle bearing	2	
42	7.02.08.004	Bushing	2	
43	7.02.08.024	Needle clamp bushing		1
44	7.02.15.006	Bushing screw		1
45	7.02.02.505	Needle holder		1
46		Needle holder screw		2
47	7.02.03.018	Needle bar		1
48		Needle	1	2
49	7.02.11.626	Vibrating needle stopper plate	1	
50	7.02.15.964	Stopper plate screw	2	

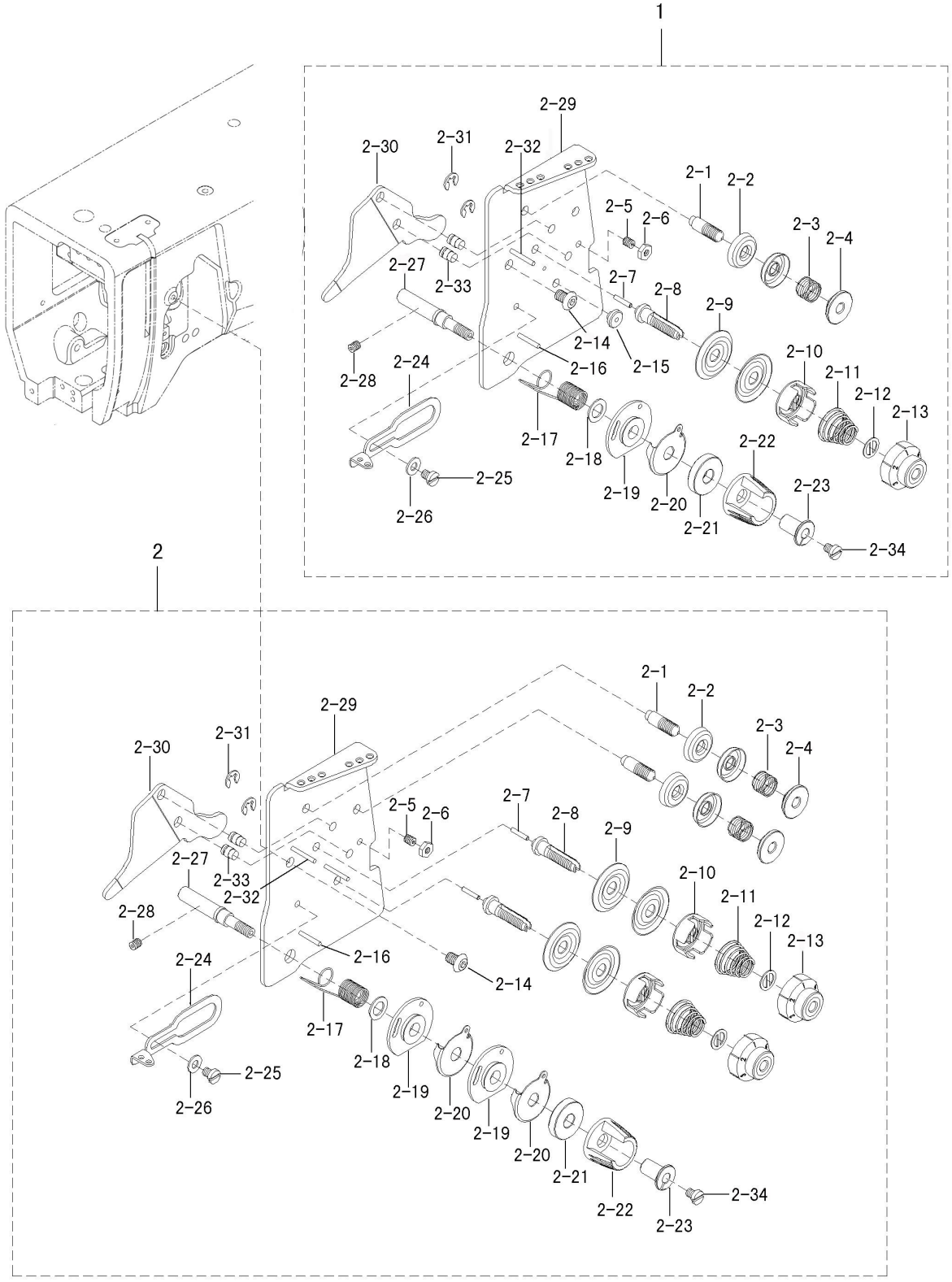
C. Needle bar holder parts



D. Thread tension regulator parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.01.373	Thread tension regulator assy.	1	
2	7.02.01.413	Thread tension regulator assy.		1
2-1.		Screw	1	1
2-2.		Thread tension plate(Small)	1	2
2-3.		Spring	1	2
2-4.		Nut	1	2
2-5.		Nut	1	1
2-6.		Screw	1	1
2-7.		Thread releasing pin	1	2
2-8.		Screw	1	2
2-9.		Thread tension disk	2	4
2-10.	7.02.23.321	Tension disk	1	2
2-11.		Adjusting spring	1	2
2-12.		Spring plate	1	2
2-13.		Nut	1	2
2-14.	7.02.15.960	Screw	1	1
2-15.		Position bolck	1	
2-16.		Thread releasing pin	1	2
2-17.	7.02.23.381	Thread take-up spring	1	1
2-18.		Washer	1	1
2-19.		Fixed plate	1	2
2-20.		Thread guide disk	1	2
2-21.		Washer	1	1
2-22.		Sleeve	1	1
2-23.		Pipe casing	1	1
2-24.		Thread guide plate	1	1
2-25.		Screw	1	1
2-26.		Washer	1	1
2-27.		Adjustment shaft	1	1
2-28.	7.02.15.049	Screw	1	1
2-29		Thread tension plate	1	1
2-30		Thread releasing plate	1	1
2-31		E type ring	2	2
2-32		Thread releasing pin	1	1
2-33		Fixed pin	2	2
2-34		Screw	1	1

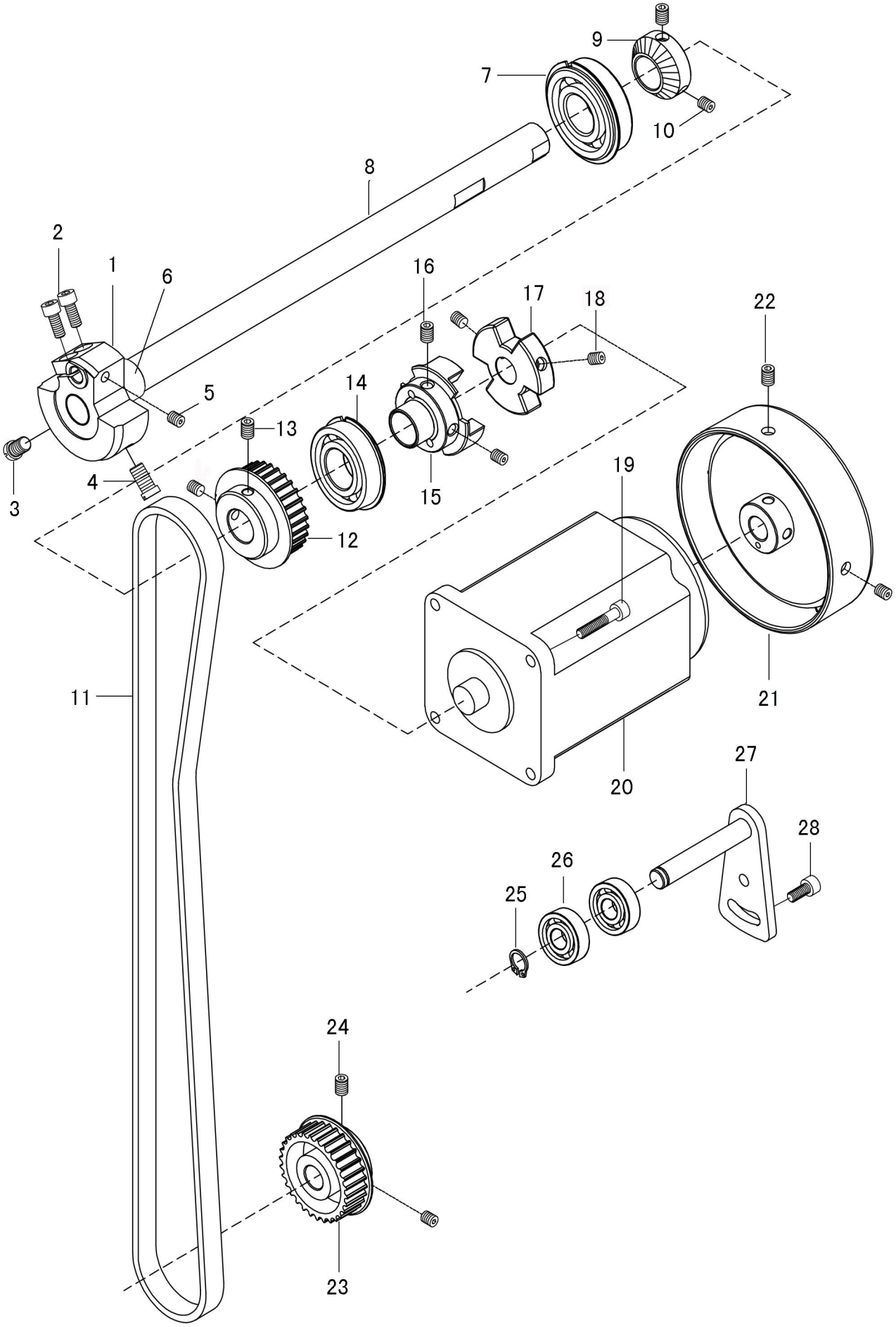
D. Thread tension regulator parts



E. Main shaft driving parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.01.358	Cam	1	1
2	7.02.15.014	Screw	2	2
3	7.02.15.013	Cam position screw	1	1
4	7.02.15.053	Cam set screw	1	1
5	7.02.15.050	Set screw	1	1
6	7.02.09.004	Upper shaft bushing	1	1
7	7.02.04.008	Bearing	1	1
8	7.02.03.330	Upper shaft	1	1
9	7.02.07.262	Thread winder driven wheel	1	1
10	7.02.15.057	Driven wheel screw	2	2
11	7.02.07.352	Timing belt	1	1
12	7.02.07.351	Timing belt wheel（Upper）	1	1
13	7.02.15.050	Set screw	2	2
14	7.02.04.152	Bearing	1	1
15	7.02.05.592	Coupling incl. 7.02.16.567 & 7.02.05.593	1	1
16	7.02.15.050	Set screw	2	2
17	7.02.05.593	Elastic component of clutch	1	1
18	7.02.15.050	Set screw	2	2
19	7.02.15.544	Mounting screw	4	4
20	7.02.19.456	Direct driven motor	1	1
21	7.02.07.280	Pulley	1	1
22	7.02.15.057	Set screw	2	2
23	7.02.07.350	Timing belt wheel（Lower）	1	1
24	7.02.15.050	Set screw	2	2
25	7.02.18.145	Elastic retaining ring	1	1
26	7.02.18.281	Bearing assy	1	1
27	7.02.13.521	Tension wheel bracket	1	1
28	7.02.15.048	Screw	1	1

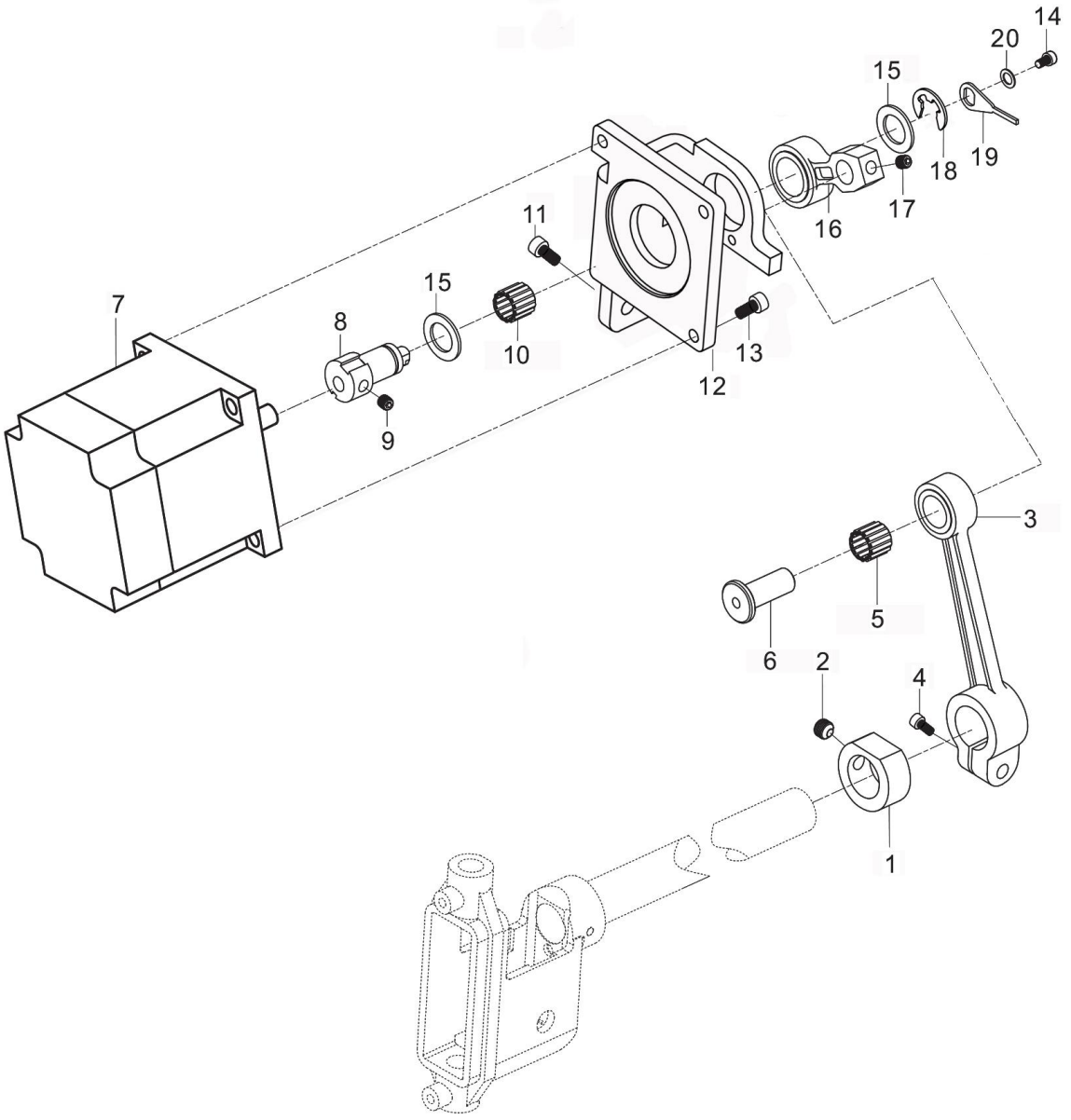
E. Main shaft driving parts



F. Needle feed parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.09.006	Retaining ring	1	1
2	7.02.15.054	Screw	1	1
3	7.02.01.375	Link	1	1
4		Screw	1	1
5		Needle bearing	1	1
6		Pin	1	1
7	7.02.19.457	Vibrating needle step motor	1	1
8		Eccentric shaft	1	1
9		Screw	1	1
10		Needle bearing	1	1
11		Screw	2	2
12	7.02.13.523	Motor seat	1	1
13		Screw	3	3
14	7.02.15.976	Screw	1	1
15	7.02.18.040	Washer	1	1
16		Crank link	1	1
17		Screw	1	1
18		Retaining ring	1	1
19	7.02.11.627	Sensing element	1	1
20	7.02.18.290	Washer	1	1
21	7.02.04.240	Bearing	1	1

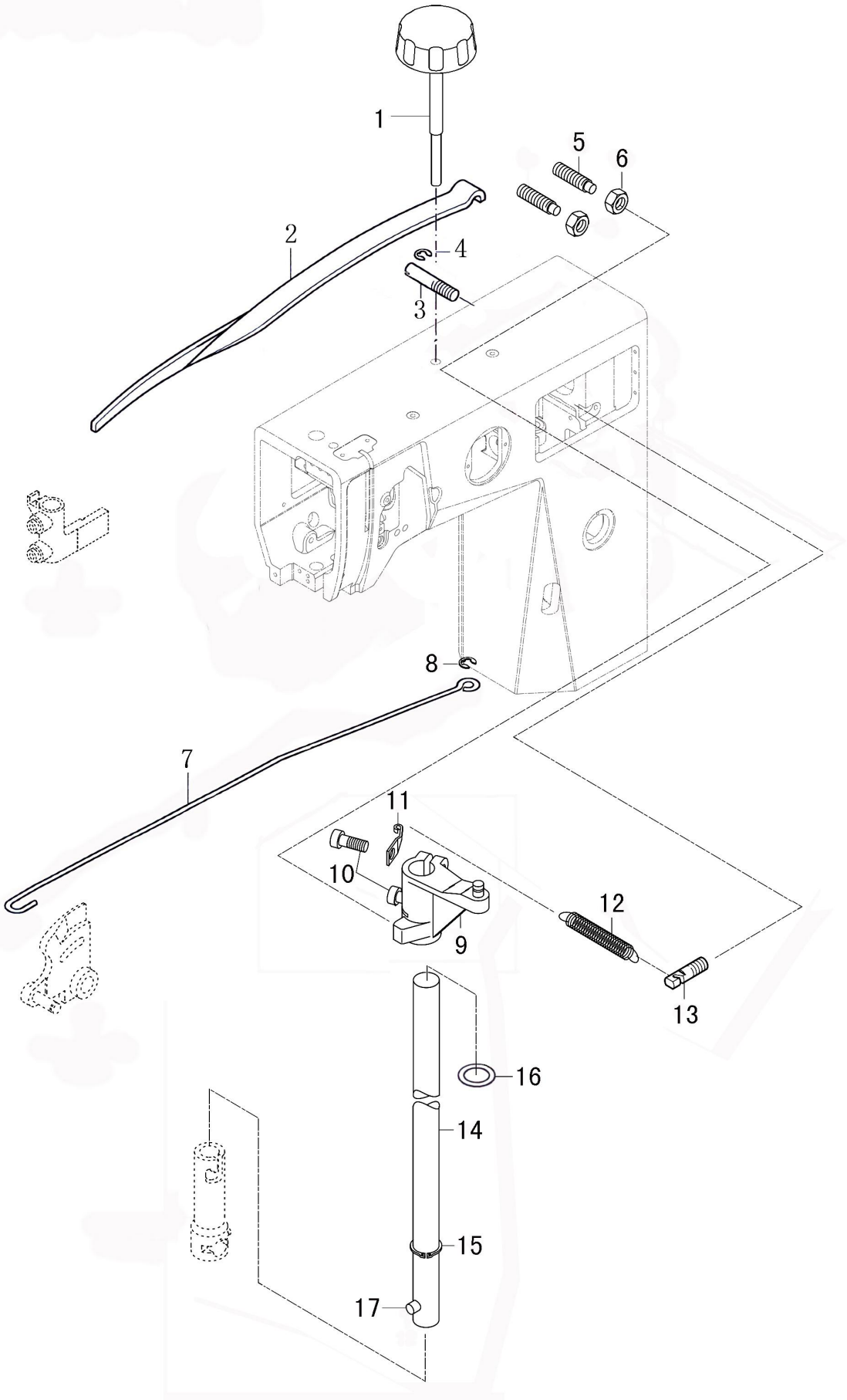
F. Needle feed parts



G. Presser foot lifting parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.16.561	Adjusting presser handle	1	1
2	7.02.17.409	Elastic presser plate	1	1
3	7.02.15.791	Spring presser plate supporting screw	1	1
4	7.02.18.039	Split retaining ring	1	1
5	7.02.15.989	Restrict screw	2	2
6	7.02.15.067	Nut	2	2
7	7.02.17.410	Knee lifting lever connecting rod	1	1
8	7.02.18.031	Split retaining ring	1	1
9	7.02.06.004	Upper and lower transport arm	1	1
10	7.02.15.053	Screw	2	2
11	7.02.17.003	Spring fixed plate	1	1
12	7.02.17.414	Stretch spring	1	1
13	7.02.10.368	Spring hanger	1	1
14	7.02.03.005	Shaft	1	1
15	7.02.18.023	Elastic retaining ring	1	1
16	7.02.18.012	Washer	1	1
17	7.02.10.006	Fixed pin	1	1

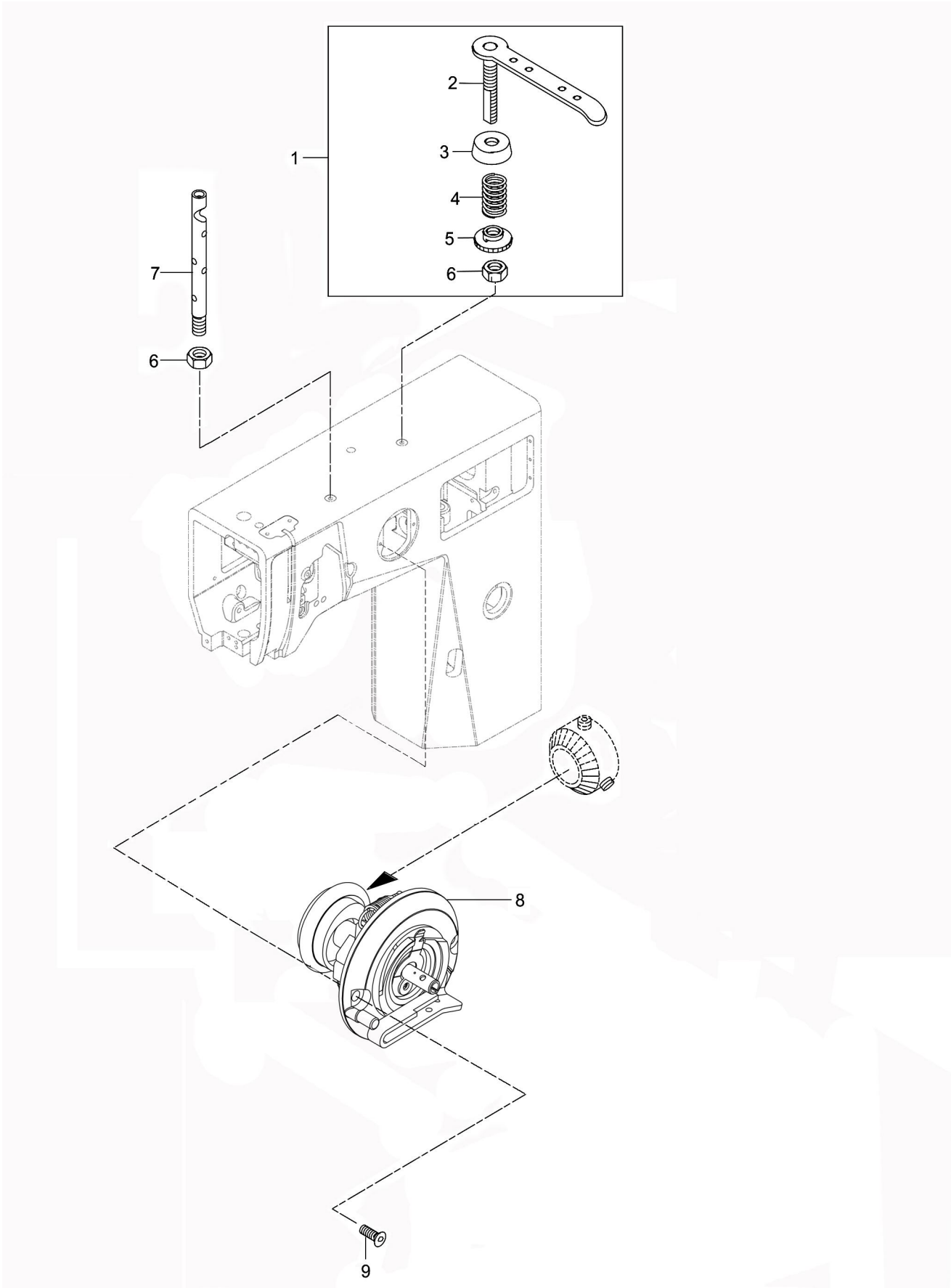
G. Presser foot lifting parts



H. Bobbin winder parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.01.302	Thread guide	1	1
2		Thread guide bar	1	1
3		Adjusting spring seat	1	1
4		Spring	1	1
5		Nut	1	1
6		Nut	1	1
7	7.02.21.029	Thread post	2	2
8	7.02.01.378	Bobbin winder assy.	1	1
9	702.15.973	Screw	2	2

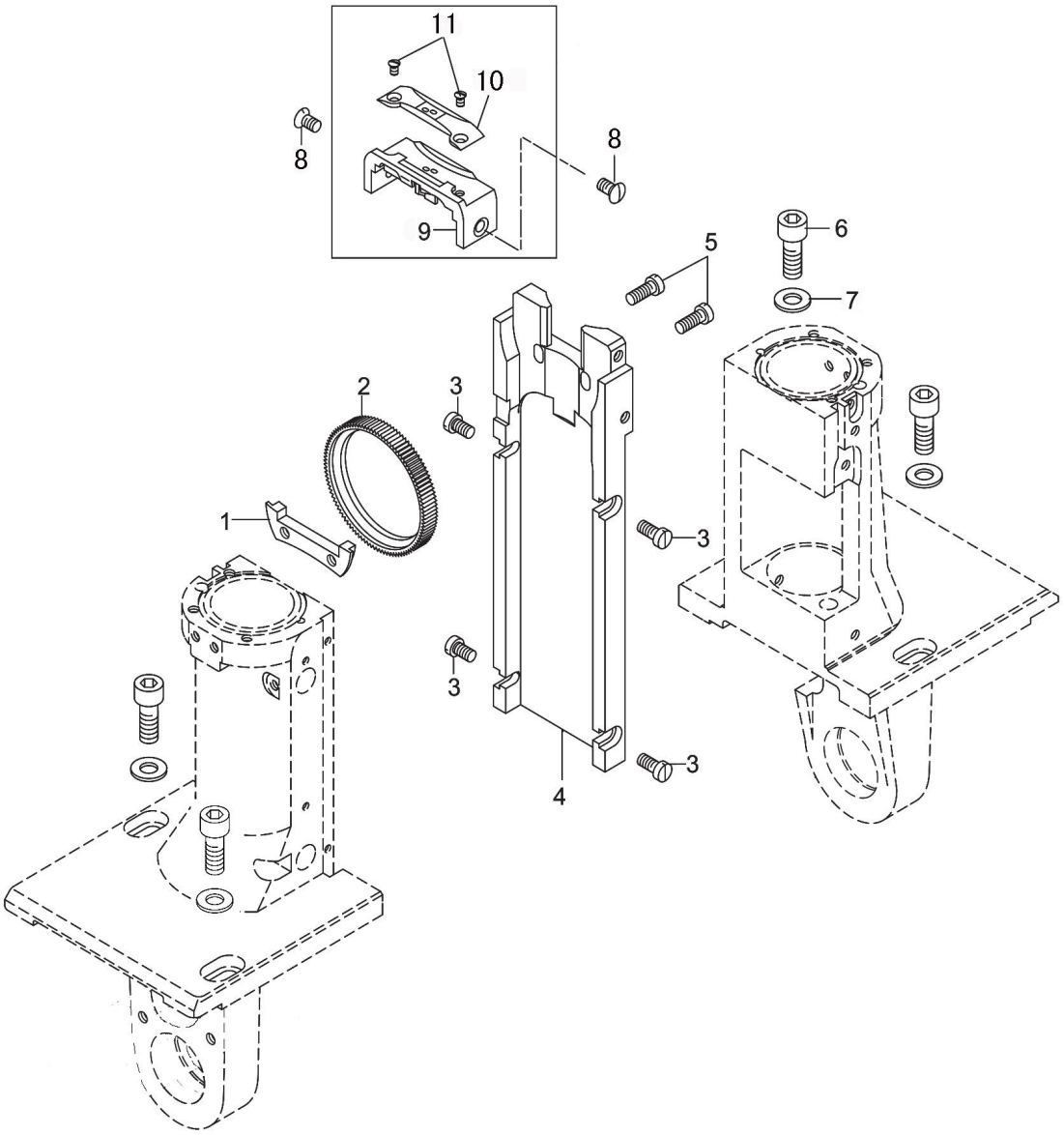
H. Bobbin winder parts



I. Bed plate feed parts for 2 needle

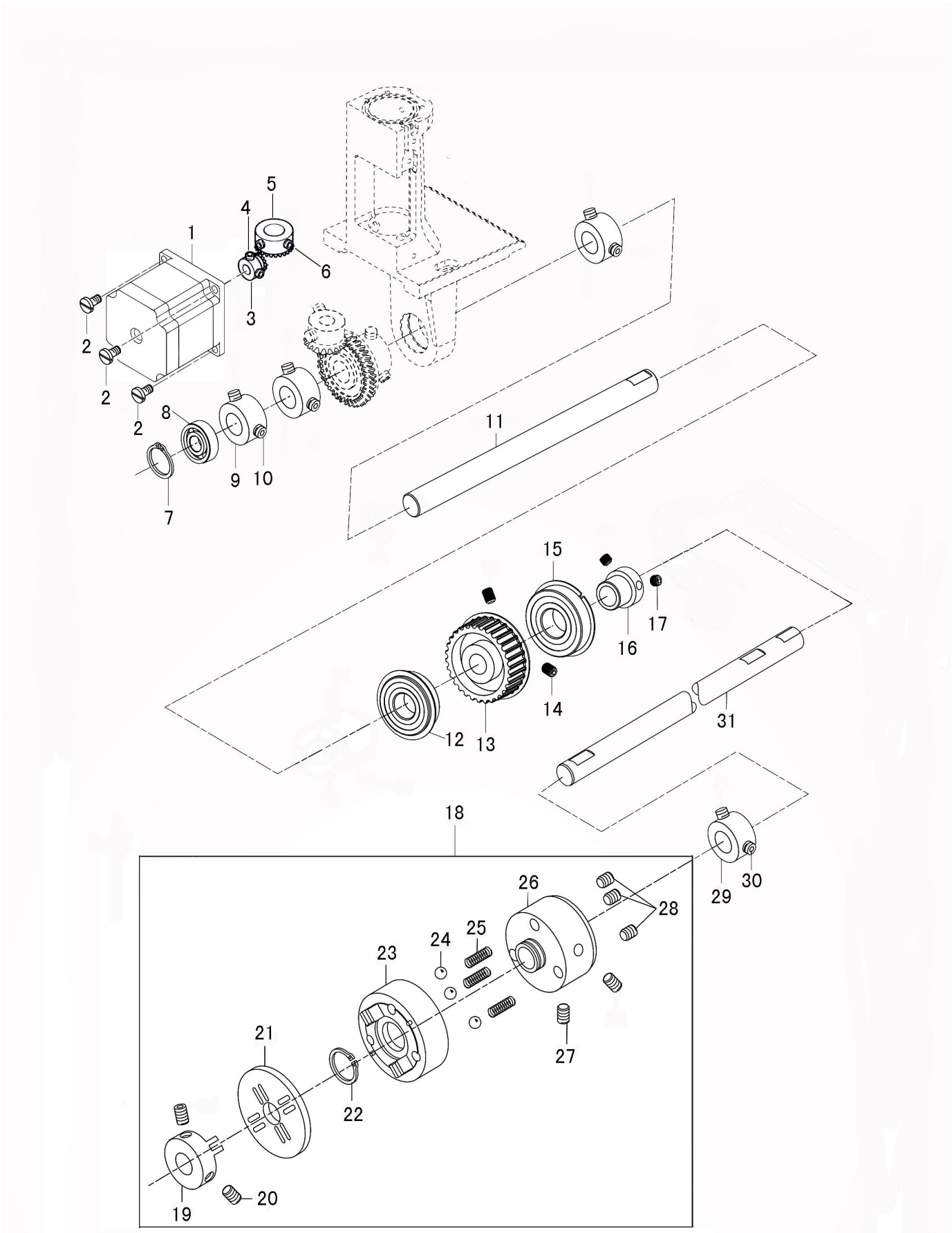
No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.17.017	Feed wheel fixed plate		1
2	7.02.07.018	Feed wheel		1
3	7.02.15.006	Support plate screw		4
4	7.02.13.382	Support plate		1
5	7.02.15.017	Fixed plate screw		2
6	7.02.15.965	Screw	2	2
7	7.02.18.003	Washer	2	2
8	7.02.15.032	Needle plate screw		2
9	7.02.02.500	Needle plate		1
10		Small needle plate		1
11	7.02.23.112	Small needle plate screw		2

I. Bed plate feed parts for 2 needle



J. Lower feed and clutch set parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.19.458	Lower feed step motor	1	1
2	7.02.15.803	Motor mounting screw	4	4
3	7.02.07.011	Gear (Small)	1	
4		Screw	2	2
5	7.02.07.012	Gear (Large)	1	
6		Screw	2	2
7	7.02.18.027	Retaining ring	1	1
8	7.02.04.110	Bearing	1	1
9	7.02.09.079	Lower shaft collar	3	3
10	7.02.15.056	Screw	6	6
11	7.02.03.552	Lower shaft（Left）	1	1
12	7.02.04.012	Bearing（Left）		
13		Timing belt wheel (Lower)		
14		Screw		
15	7.02.04.013	Bearing （Right）	1	1
16	7.02.08.011	Bushing （Right）	1	1
17	7.02.15.054	Set screw	2	2
18	7.02.01.354	Safety clutch assy.	1	1
19		Coupling（Left）	1	1
20		Set screw	2	2
21	7.02.16.419	Connecting plate	1	1
22		Elastic stop ring	2	2
23		Coupling（Right）	1	1
24		Ball	3	3
25		Spring	3	3
26		Clutch seat	1	1
27		Set screw	2	2
28		Adjusting screw	3	3
29	7.02.09.007	Retaining ring	2	2
30	7.02.15.054	Screw	4	4
31	7.02.03.551	Lower shaft（Right）	1	1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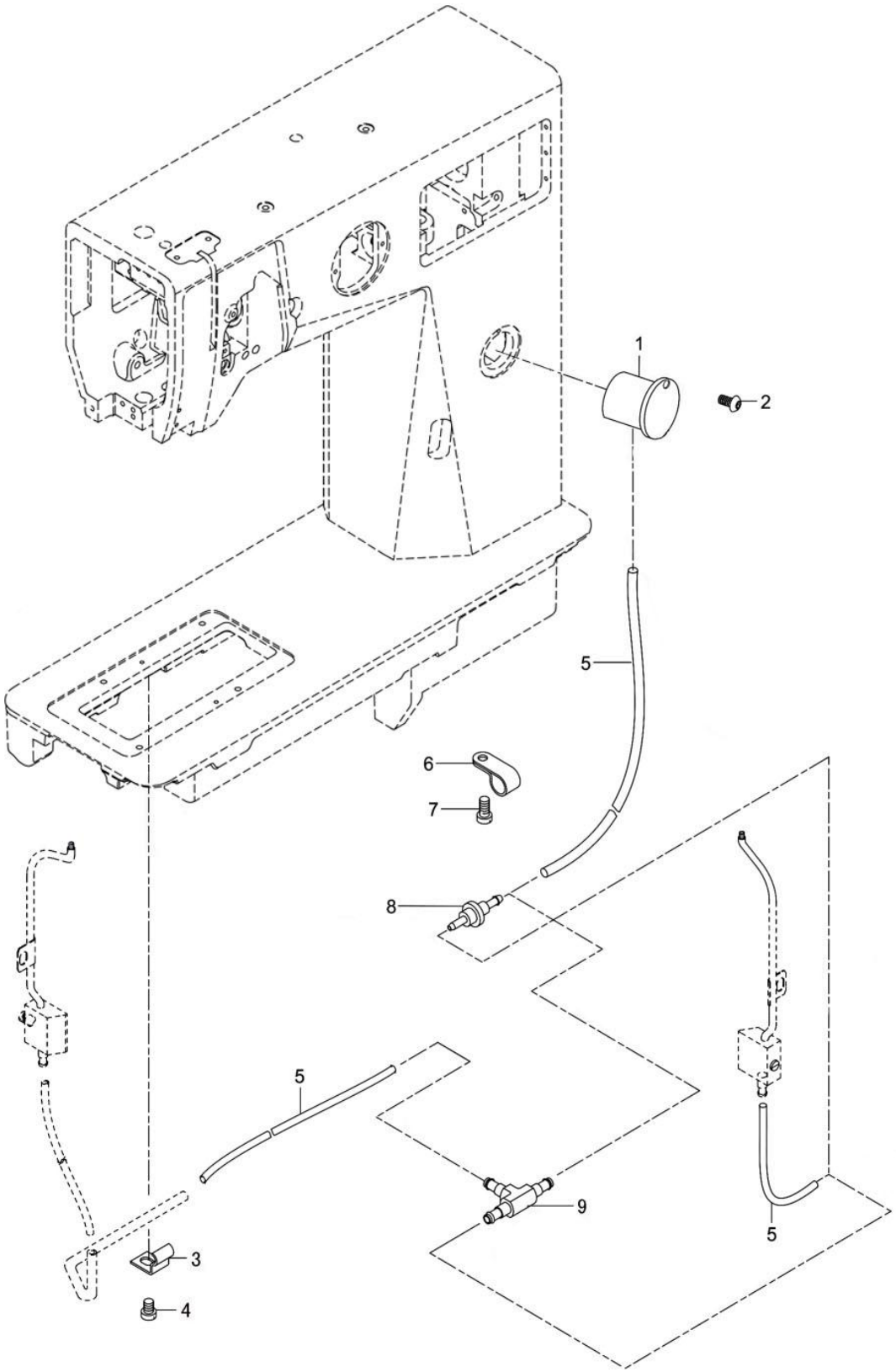
K. Oil lubrication parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.16.430	Oil box	1	1
2	7.02.15.973	Screw	1	1
3	7.02.17.412	Oil tube clamp	1	1
4	7.02.15.022	Screw	1	1
5	7.02.16.047	Oil tube	1	1
6	7.02.16.166	Oil tube clamp	1	1
7	7.02.15.022	Screw M4X4.5	1	1
8	7.02.16.307	Oil tube joint	1	1
9	7.02.16.250	Three-way oil tube joint		1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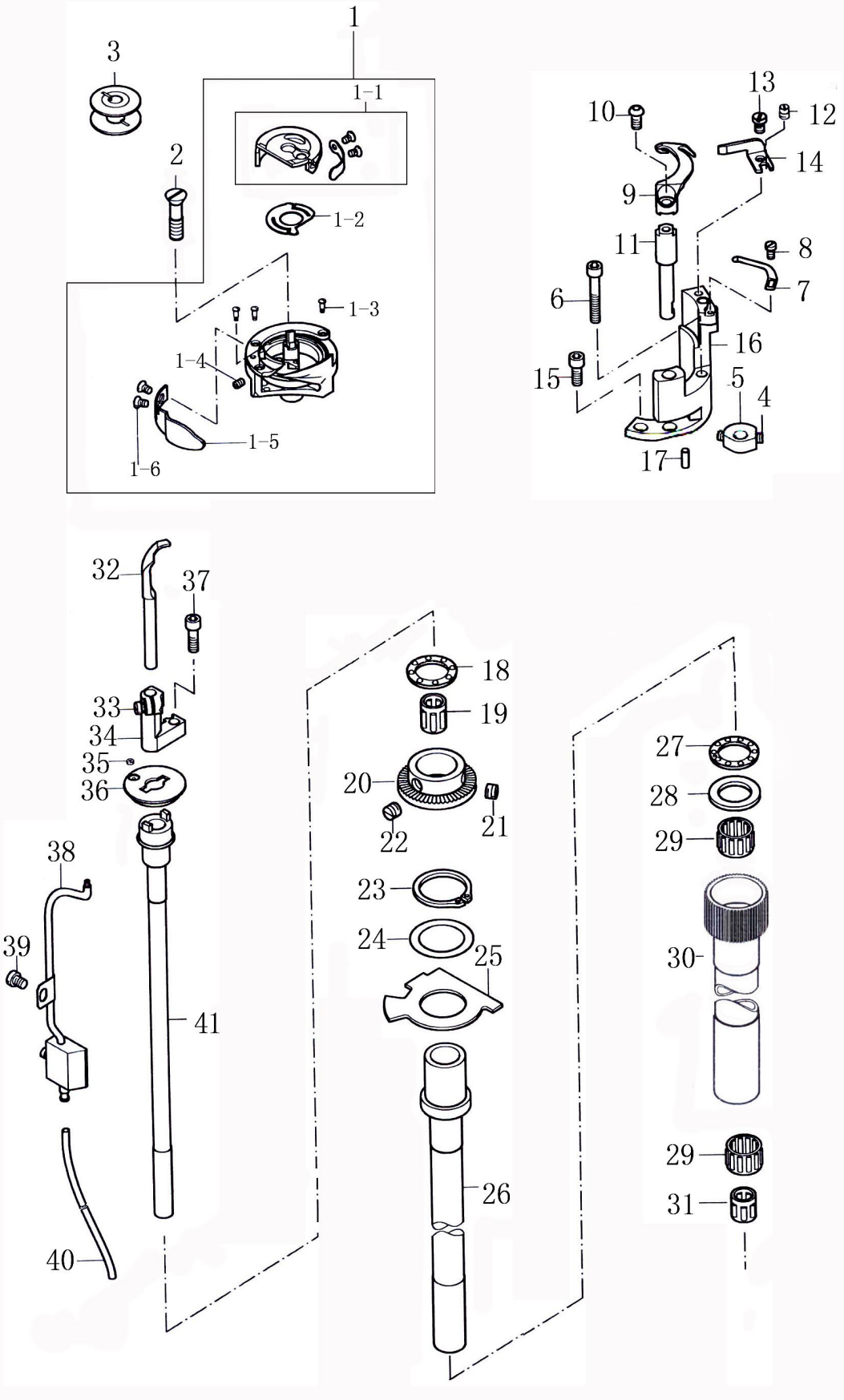
L. Hook parts (Left)

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.02.392	Hook assy.		1
1-1	7.02.02.393	Bobbin case		1
1-2		Elastic gasket		1
1-3		Screw		3
1-4		Screw		1
1-5		Needle guard slice		1
1-6		Screw		2
2	7.02.15.038	Screw		1
3	7.02.21.385	Bobbin		1
4	7.02.15.047	Screw		2
5	7.02.07.205	Driven gear		1
6	7.02.15.799	Screw（Long）		1
7	7.02.20.051	Thread trimming clamp plate		1
8	7.02.15.801	Screw		1
9	7.02.20.052	Movable knife		1
10	7.02.15.063	Screw M4X10		1
11	7.02.03.342	Driven shaft		1
12	7.02.10.458	Eccentric pin		1
13	7.02.15.433	Screw		1
14	7.02.20.050	Fixed knife		1
15	7.02.15.063	Screw（Short）		1
16	7.02.01.352	Movable knife bracket		1
17	7.02.10.370	Position pin		1
18	7.02.04.019	Bearing		1
19	7.02.04.018	Needle bearing		1
20	7.02.07.206	Gear		1
21	7.02.15.062	Screw M6X0.75X4		2
22	7.02.15.247	Set screw		
23	7.02.18.255	Elastic retaining ring		1
24	7.02.18.256	Washer		1
25	7.02.11.386	Oil guard plate		1
26	7.02.08.027	Bushing		1
27	7.02.04.113	Bearing		1
28	7.02.18.257	Washer		1
29	7.02.04.020	Bearing		2
30	7.02.01.356	Bushing		1
31	7.02.04.009	Needle bearing		1
32	7.02.01.288	Thread distributing claw		1
33	7.02.15.420	Screw		1
34	7.02.01.289	Thread distributing claw bracket		1
35	7.02.16.300	Seal ring		1
36	7.02.11.385	Oil supply plate		1
37	7.02.15.577	Screw		1
38	7.02.16.303	Oil supply valve		1
39	7.02.15.022	Screw		1
40	7.02.16.047	Oil tube		1
41	7.02.03.340	Shaft		1

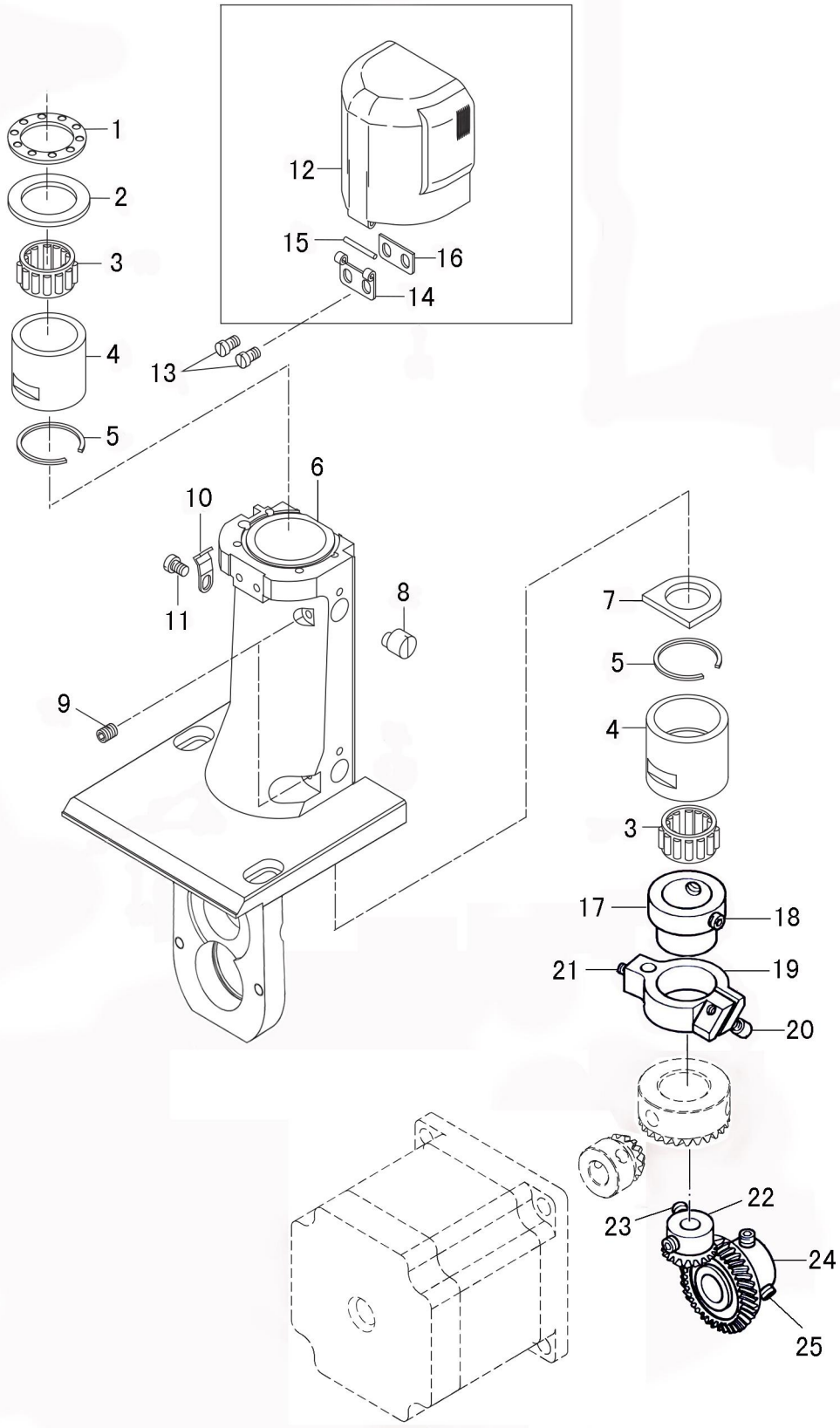
L. Hook parts (Left)



M. Side bracket parts (Left)

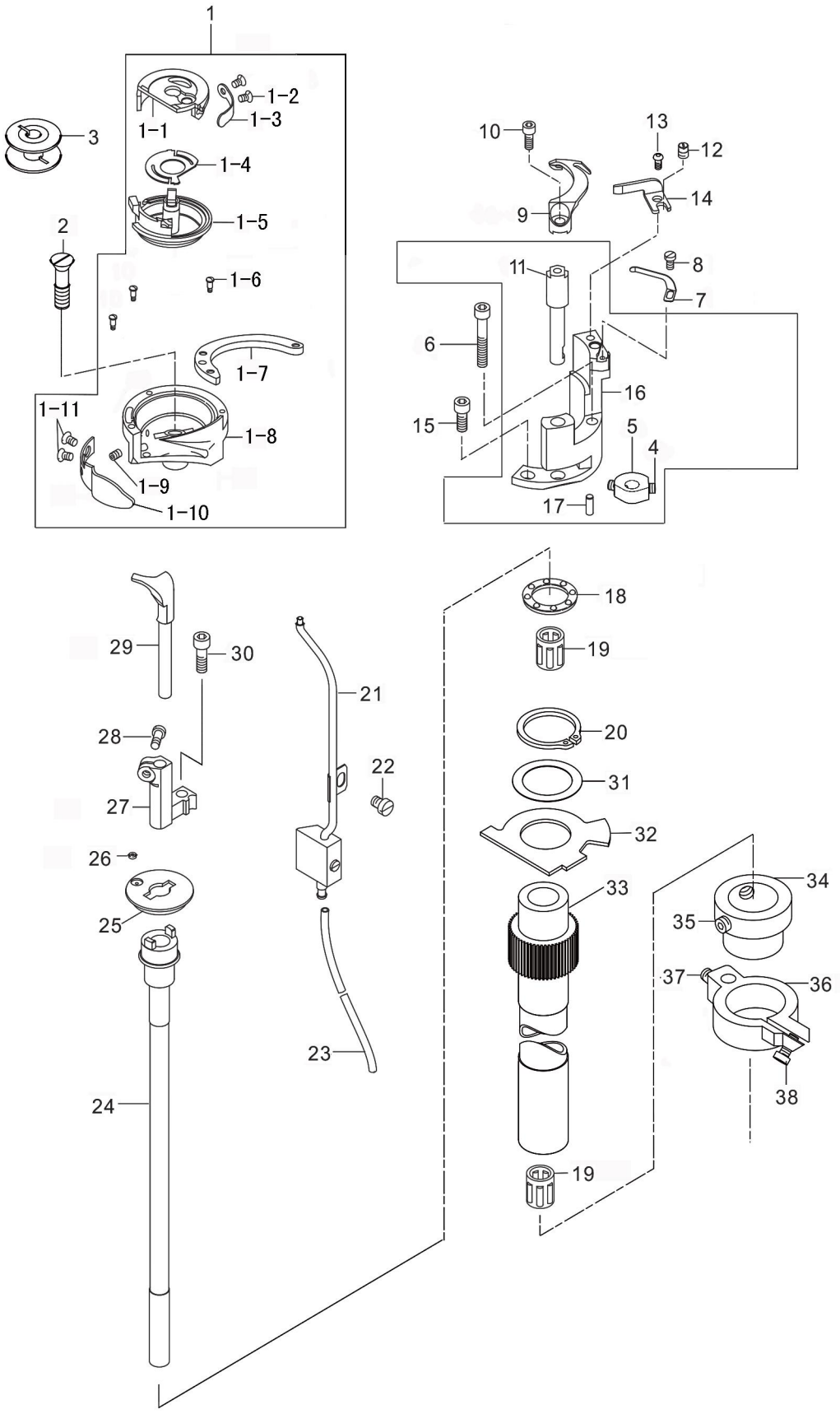
No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.04.111	Bearing		1
2	7.02.18.253	Washer		1
3	7.02.04.112	Needle bearing		2
4	7.02.08.393	Bushing		2
5	7.02.18.254	Elastic retaining ring		2
6	7.02.13.52701	Left side bracket		1
7	7.02.16.301	Oil felt		1
8	7.02.10.011	Adjusting pin		1
9	7.02.15.035	Set screw		1
10	7.02.17.350	Spring plate		1
11	7.02.15.433	Screw		1
12	7.02.02.391	Post cap assy.		1
13	7.02.15.005	Screw		2
14		Post cap turning seat		1
15		Pin		1
16		Washer		1
17	7.02.09.080	Collar		1
18	7.02.15.054	Screw		2
19	7.02.06.278	Thread trimming crank		1
20	7.02.15.063	Screw		1
21	7.02.15.056	Set screw		1
22	7.02.07.016	Gear（Small）		1
23	7.02.15.054	Screw		2
24	7.02.07.015	Gear（Large）		1
25	7.02.15.050	Screw		2

M. Side bracket parts (Left)



N. Hook parts (Right)

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.02.392	Hook assy.	1	1
1-1	7.02.02.393	Hook-top	1	1
1-2		Screw	2	2
1-3		Spring	1	1
1-4		Elastic gasket	1	1
1-5		Bobbin case base	1	1
1-6		Screw	3	3
1-7		Hook gib	1	1
1-8		Bobbin case	1	1
1-9		Screw	1	1
1-10		Needle guard slice	1	1
1-11		Screw	2	2
2	7.02.15.038	Screw	1	1
3	7.02.21.385	Bobbin	1	1
4	7.02.15.047	Screw	2	2
5	7.02.07.205	Driven gear	1	1
6	7.02.15.799	Screw（Long）	1	1
7	7.02.20.051	Thread trimming clamp plate	1	1
8	7.02.15.801	Screw	1	1
9	7.02.20.052	Movable knife	1	1
10	7.02.15.063	Screw M4X10	1	1
11	7.02.03.342	Driven shaft	1	1
12	7.02.10.458	Eccentric pin	1	1
13	7.02.15.433	Screw	1	1
14	7.02.20.050	Fixed knife	1	1
15	7.02.15.063	Screw（Short）	1	1
16	7.02.01.352	Movable knife bracket	1	1
17	7.02.10.370	Restrict pin	1	1
18	7.02.04.019	Bearing	1	1
19	7.02.04.018	Needle bearing	2	2
20	7.02.18.251	Elastic retaining ring	1	1
21	7.02.16.303	Oil supply valve	1	1
22	7.02.15.022	Fixed screw	1	1
23	7.02.16.047	Oil tube	1	1
24	7.02.03.340	Shaft	1	1
25	7.02.11.385	Oil supply plate	1	1
26	7.02.16.300	Seal ring	1	1
27	7.02.01.289	Thread distributing claw bracket	1	1
28	7.02.15.006	Screw M4X8	1	1
29	7.02.01.288	Thread distributing claw	1	1
30	7.02.15.577	Screw	1	1
31	7.02.18.252	Washer	1	1
32	7.02.11.386	Oil guard plate	1	1
33	7.02.08.392	Bushing	1	1
34	7.02.09.080	Bushing collar	1	1
35	7.02.15.054	Screw	2	2
36	7.02.06.279	Thread trimming crank	1	1
37	7.02.15.056	Crank screw	1	1
38	7.02.15.803	Set screw M5X10	1	1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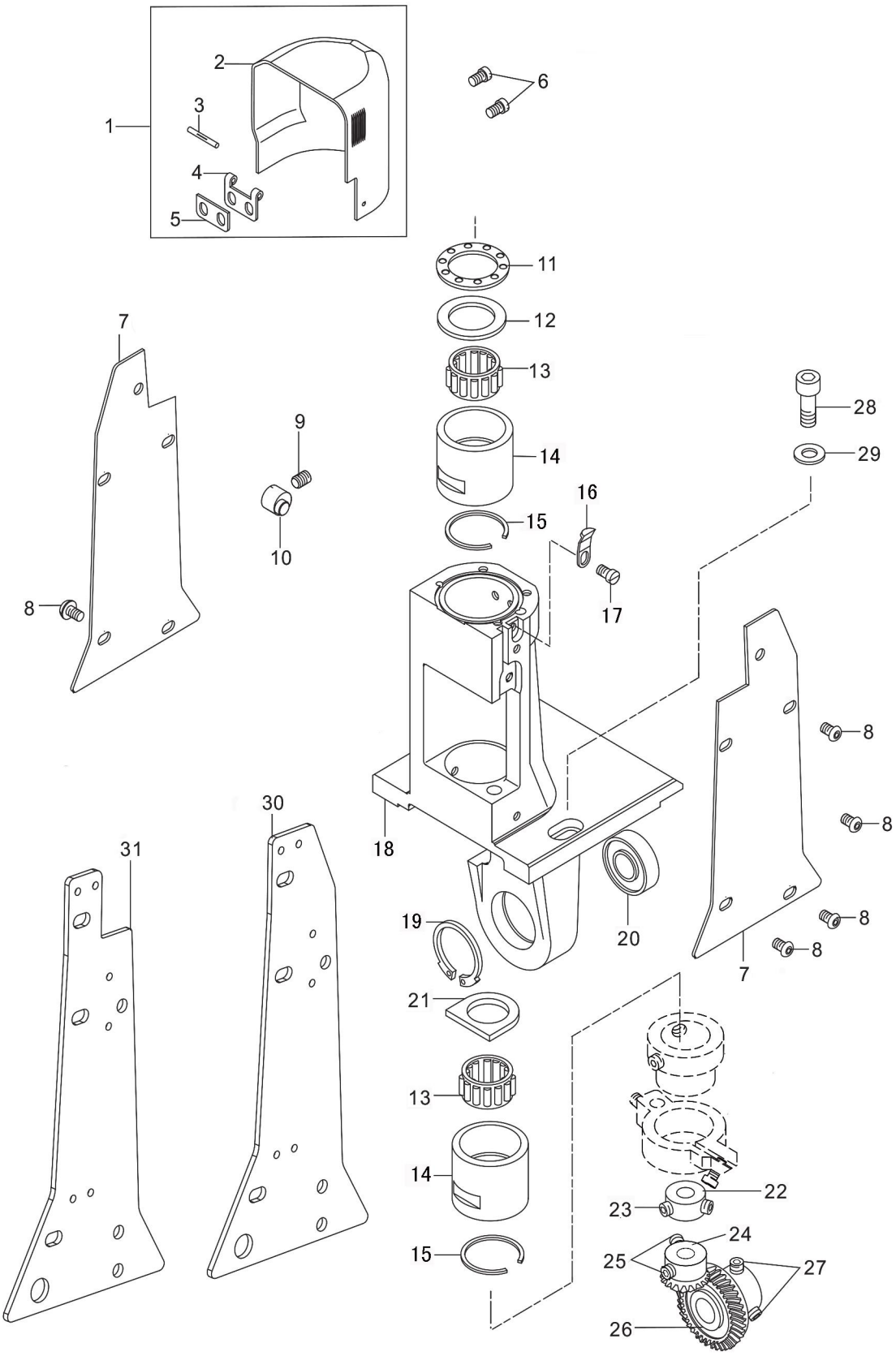
0. Side bracket parts (Right)

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.02.391	Post cap assy.		
2		Post cap		
3		Pin		
4		Post cap turning seat		
5		Washer		
6	7.02.15.1120	Set screw	2	4
7	7.02.11.485	Cover plate		2
8	7.02.15.973	Cover plate screw	6	10
9	7.02.15.035	Adjusting pin set screw	1	1
10	7.02.10.011	Adjusting pin	1	1
11	7.02.04.111	Bearing	1	1
12	7.02.18.253	Washer	1	1
13	7.02.04.112	Needle bearing	2	2
14	7.02.08.393	Bushing	1	1
15	7.02.18.254	Elastic retaining ring	1	1
16	7.02.17.420	Spring plate	1	1
17	7.02.15.433	Screw	1	1
18	7.02.13.29001	Side bracket (Right)	1	1
19	7.02.18.250	Elastic retaining ring	1	1
20	7.02.04.110	Ball bearing	1	1
21	7.02.16.301	Oil felt	1	1
22	7.02.09.115	Retaining ring	1	1
23	7.02.15.054	Screw	2	2
24	7.02.07.011	Gear (Small)	1	1
25	7.02.15.054	Screw	2	2
26	7.02.07.012	Gear (Large)	1	1
27	7.02.15.050	Screw	2	2
28	7.02.15.965	Screw	2	2
29	7.02.18.003	Washer	2	2
30		Cover plate	1	
31		Cover plate	1	

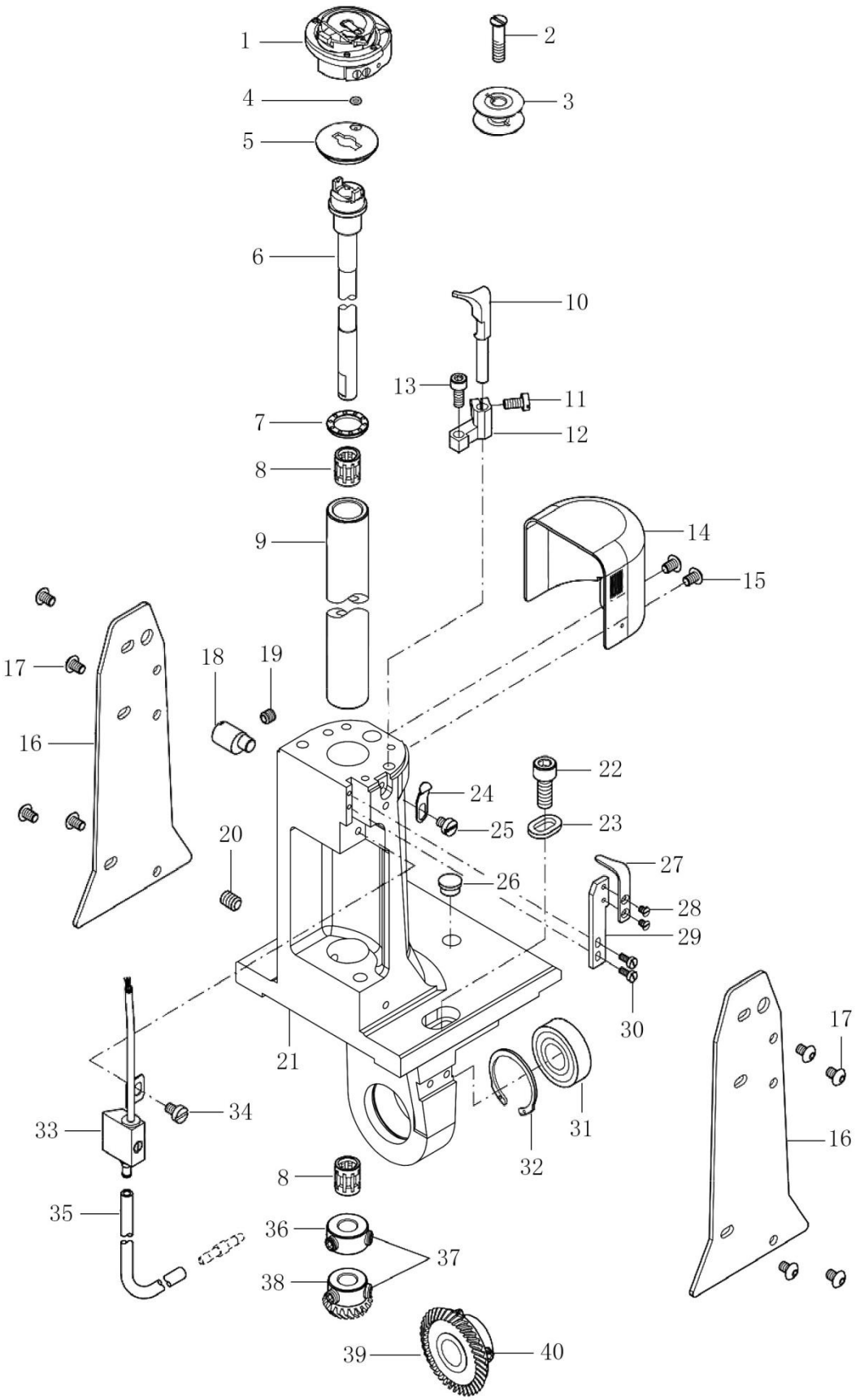
0. Side bracket parts (Right)



P. Side bracket parts（Short thread end）

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.02.392	Hook assy.	1	
2	7.02.15.038	Screw	1	
3	7.02.21.385	Bobbin	1	
4	7.02.16.300	Sealing ring	1	
5	7.02.11.385	Oil supply plate	1	
6	7.02.03.340	Shaft	1	
7	7.02.04.019	Bearing	1	
8	7.02.04.018	Needle bearing	2	
9	7.02.08.600	Bushing	1	
10	7.02.02.662	Thread distributing claw	1	
11	7.02.15.420	Screw	1	
12	7.02.02.663	Thread distributing claw bracket	1	
13	7.02.15.577	Screw	1	
14	7.02.02.661	Post cap	1	
15	7.02.15.973	Screw	2	
16	7.02.11.650	Cover plate	2	
17	7.02.15.973	Screw	8	
18	7.02.10.590	Adjusting pin	1	
19	7.02.15.056	Set screw	1	
20	7.02.15.057	Set screw	1	
21	7.02.13.501	Side bracket (Right)	1	
22	7.02.15.965	Screw	2	
23	7.02.18.003	Washer	2	
24	7.02.17.420	Elastic gasket	1	
25	7.02.15.433	Screw	1	
26	7.02.16.559	Rubber plug	1	
27	7.02.11.660	Thread guide	1	
28	7.02.15.1144	Screw	2	
29	7.02.11.661	Thread guide fixed plate	1	
30	7.02.15.674	Screw	2	
31	7.02.04.110	Ball bearing	1	
32	7.02.18.250	Elastic retaining ring	1	
33	7.02.16.560	Oil qty.regulating valve assy.	1	
34	7.02.15.022	Screw	1	
35	7.02.16.047	Oil tube	1	
36	7.02.09.115	Collar	1	
37	7.02.15.054	Screw	4	
38	7.02.07.011	Gear（Small）	1	
39	7.02.07.012	Gear（Large）	1	
40	7.02.15.050	Screw	2	

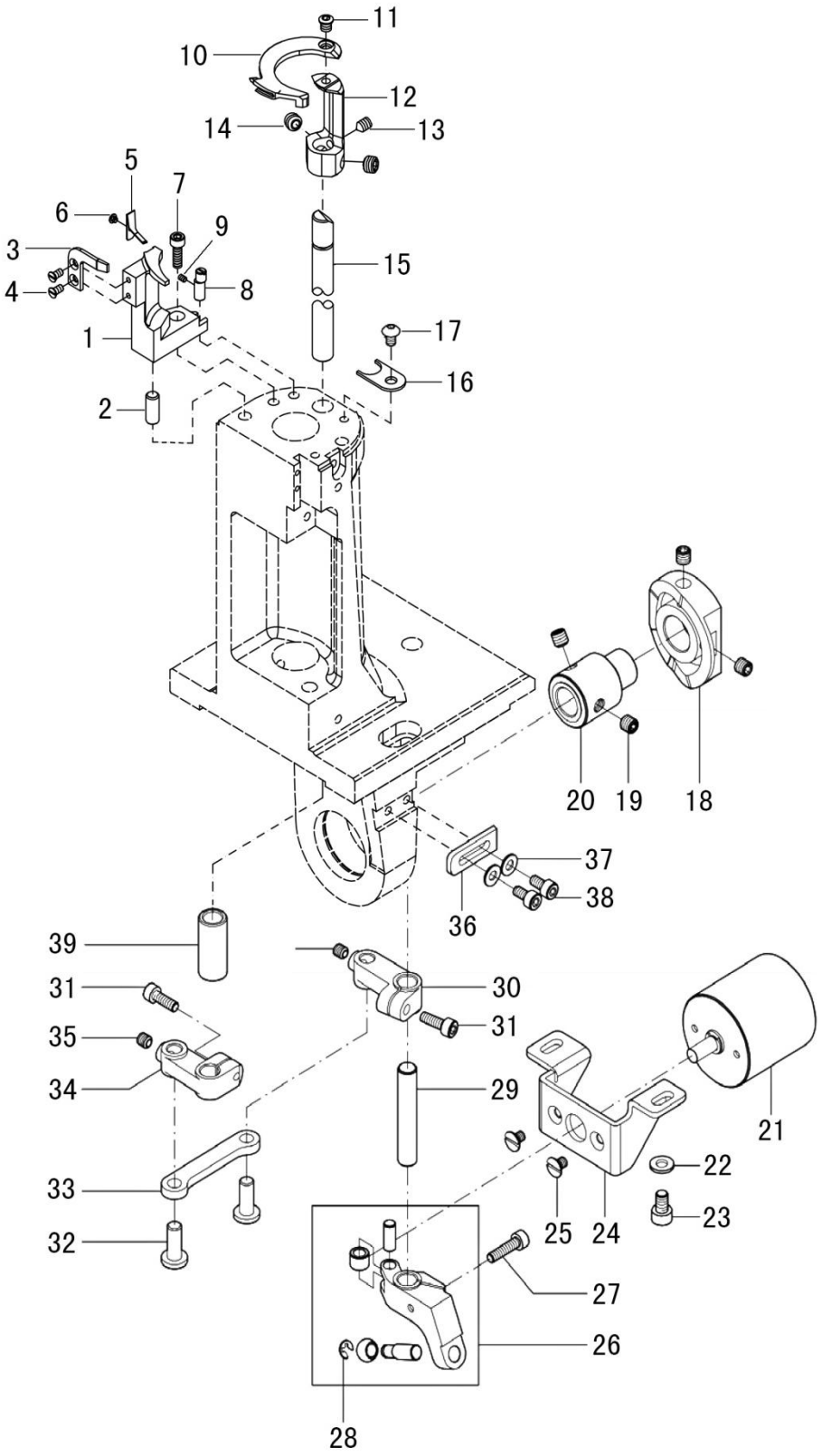
P. Side bracket parts (Short thread end)



Q. Thread trimming parts (Short thread end)

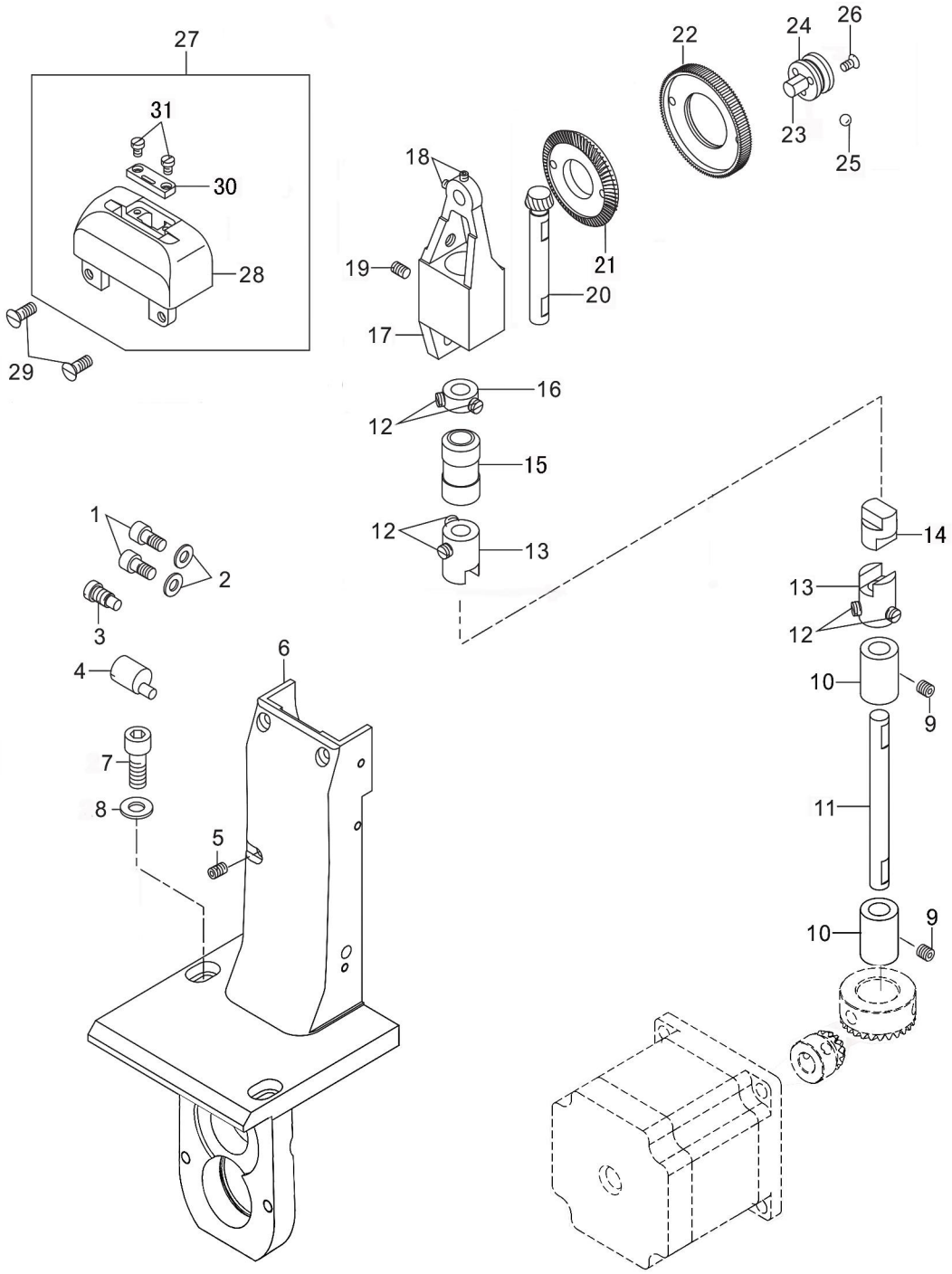
No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.13.510	Fixed knife seat	1	
2		Position pin	1	
3	7.02.20.101	Fixed knife	1	
4		Screw	2	
5	7.02.20.102	Thread clamping plate	1	
6	7.02.15.1104	Screw	2	
7		Screw	1	
8		Adjusting pin	1	
9		Set screw	1	
10	7.02.20.100	Movable knife	1	
11	7.02.15.1095	Screw	1	
12	7.02.13.476	Movable knife seat	1	
13	7.02.15.1136	Screw	1	
14	7.02.15.054	Screw	2	
15	7.02.03.540	Movable knife shaft	1	
16	7.02.11.652	Stopper plate	1	
17	7.02.15.973	Screw	1	
18	7.02.05.560	Thread trimming cam	1	
19	7.02.15.050	Screw	4	
20	7.02.08.576	Thread trimming cam bushing	1	
21	7.02.19.420	Thread trimming solenoid	1	
22	7.02.18.016	Washer	2	
23	7.02.15.803	Screw	2	
24	7.02.12.337	Thread trimming solenoid fixed plate	1	
25	7.02.15.797	Screw	2	
26	7.02.05.543	Thread trimming vibrating crank assy.	1	
27	7.02.15.572	Screw	1	
28	7.02.18.048	Split retaining ring	1	
29	7.02.10.566	Thread trimming vibrating shaft	1	
30	7.02.05.545	Thread trimming crank (right)	1	
31	7.02.15.577	Screw	2	
32	7.02.10.567	Link pin	2	
33	7.02.05.561	Thread trimming link	1	
34	7.02.05.562	Thread trimming crank	1	
35	7.02.15.056	Set screw	2	
36	7.02.12.335	Crank stopper block	1	
37	7.02.18.071	Washer	2	
38	7.02.15.555	Screw	2	
39	7.02.08.601	Movable knife bushing	1	

Q. Thread trimming parts (Short thread end)



R. Bed plate feed parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.15.053	Screw	2	
2	7.02.18.016	Washer	2	
3	7.02.15.030	Screw	1	
4	7.02.10.010	Adjusting pin	1	
5	7.02.15.031	Adjusting pin set screw	1	
6	7.02.13.52001	Support plate	1	
	7.02.13.52601	Bed plate		
7	7.02.15.965	Screw	2	
8	7.02.18.003	Washer	2	
9	7.02.15.047	Screw M4X4	2	
10	7.02.08.035	Bushing	2	
11	7.02.03.019	Shaft	1	
12	7.02.15.036	Screw	6	
13	7.02.08.016	Bushing	2	
14	7.02.16.004	Plastic joint	1	
15	7.02.08.015	Bushing	1	
16	7.02.09.002	Collar	1	
17	7.02.13.002	Gear bracket	1	
18	7.02.15.061	Screw	2	
19	7.02.15.035	Screw	1	
20	7.02.07.008	Bevel gear (Lower)	1	
21	7.02.07.007	Bevel gear (Upper)	1	
22	7.02.07.006	Feed wheel	1	
23	7.02.10.004	Roller bracket (Upper)	1	
24	7.02.10.002	Roller bracket (Lower)	1	
25	7.02.04.021	Ball (φ2)	24	
26	7.02.15.034	Screw	3	
27	7.02.02.397	Needle plate	1	
	7.02.02.588	Needle plate(Integrated)		
	7.02.02.660	Needle plate(Short thread end)		
	7.02.02.589	Needle plate(Large hook)		
28	7.02.15.032	Needle plate screw	2	
29	7.02.23.113	Small needle plate	1	
30	7.02.23.114	Small needle plate screw	2	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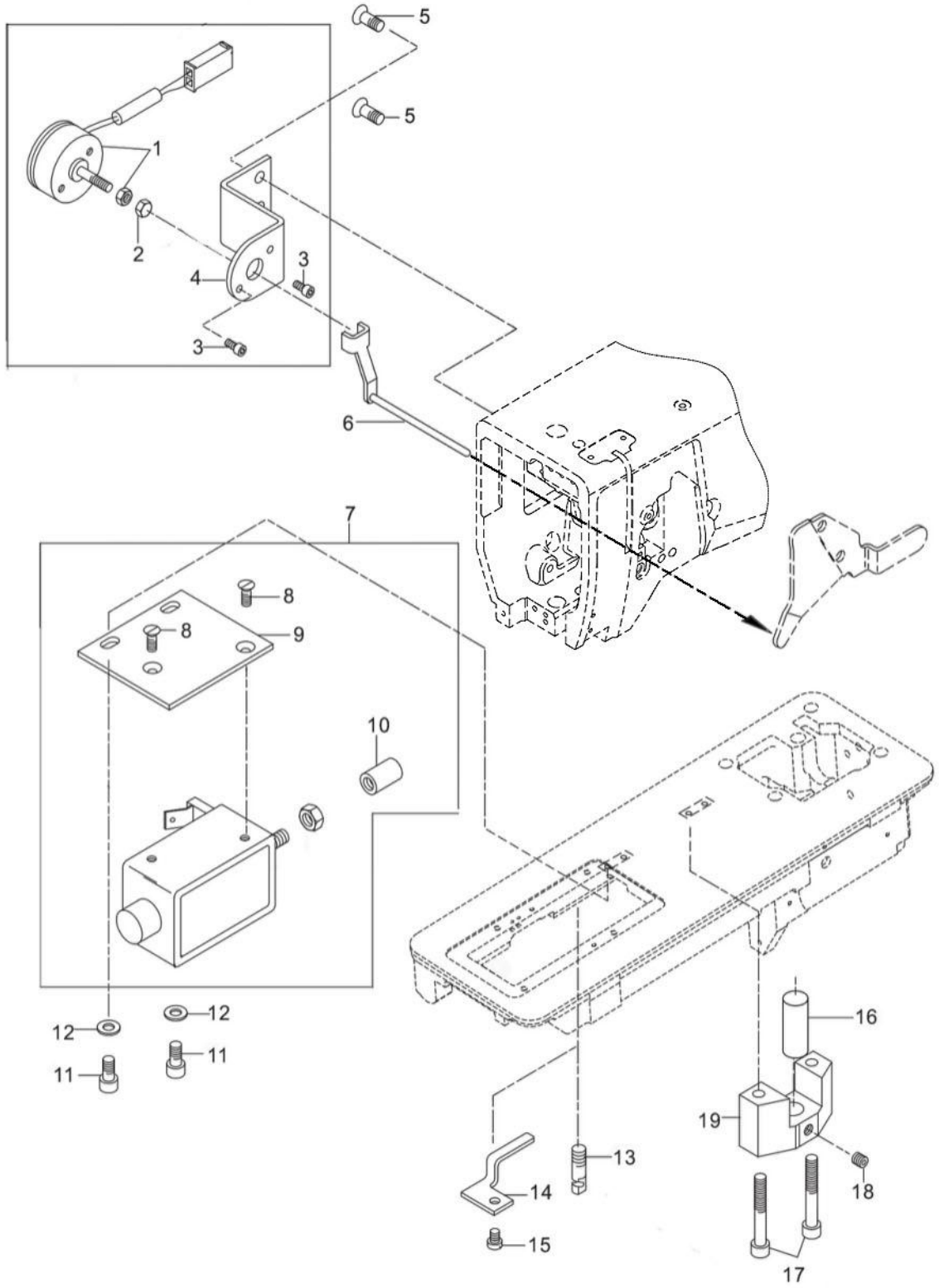
S. Thread trimming solenoid,thread releasing solenoid parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.19.345	Thread releasing solenoid	1	1
2	7.02.16.410	Solenoid joint	1	1
3	7.02.15.976	Screw	2	2
4	7.02.11.500	Fixed plate	1	1
5	7.02.15.003	Fixed plate screw	2	2
6	7.02.10.456	Thread releasing lever	1	1
7	7.02.19.211	Thread trimming solenoid	1	1
8	7.02.15.797	Thread trimming solenoid screw	2	2
9	7.02.11.387	Thread trimming solenoid fixed plate	1	1
10	7.02.16.302	Top post	1	1
11	7.02.15.803	Fixed plate screw	2	2
12	7.02.18.016	Washer	2	2
13	7.02.10.368	Spring hanger	1	1
14	7.02.17.413	Oil tube fixed clamp	1	1
15	7.02.15.022	Screw	1	1
16		Pin	1	1
17	7.02.15.798	Screw	2	2
18	7.02.15.972	Set screw M5X8	1	1
19	7.02.13.293	Thread trimming vibrating lever seat	1	1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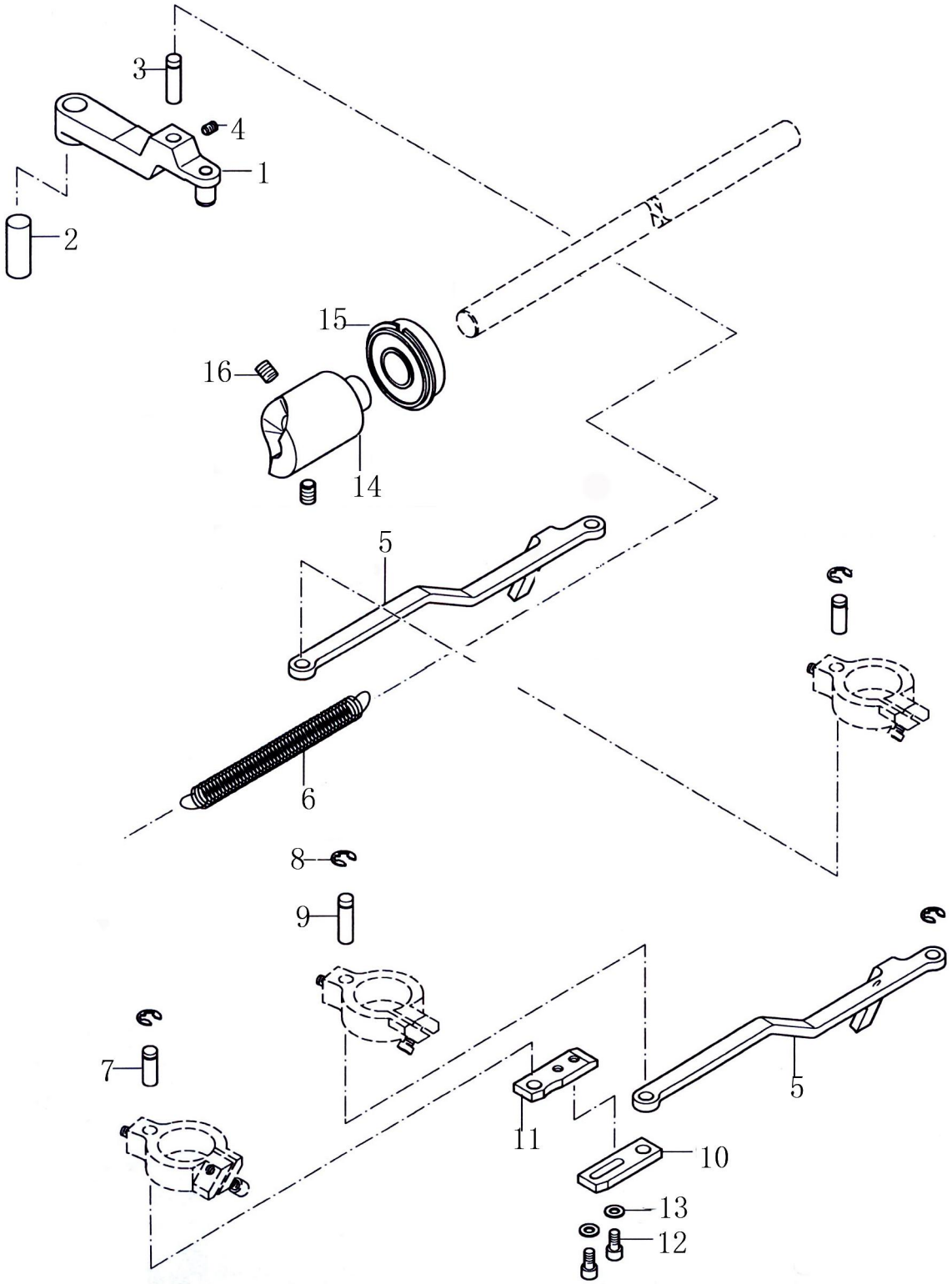
T. Thread trimming driving parts

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.01.286	Thread trimming vibrating lever assy.	1	1
2	7.02.03.341	Thread trimming vibrating lever shaft	1	1
3	7.02.10.367	Connecting lever pin (Right)	1	1
4	7.02.15.056	Connecting link pin set screw	1	1
5	7.02.05.364	Thread trimming connecting link	1	1
6	7.02.17.351	Thread trimming connecting link spring	3	3
7	7.02.10.367	Connecting link pin (Left)	1	1
8	7.02.18.039	Split retaining ring	1	1
9	7.02.10.369	Connecting lever pin Right)		1
10	7.02.11.390	Thread trimming crank connecting plate (Right)		1
11	7.02.11.391	Thread trimming crank connecting plate (Left)		1
12	7.02.15.555	Connecting plate screw		2
13	7.02.18.071	Washer		2
14	7.02.06.277	Thread trimming cam	1	1
15	7.02.04.012	Bearing	1	1
16	7.02.15.050	Screw	2	2
17	7.02.15.056	Screw	2	2
18	7.02.09.079	Washer	1	1

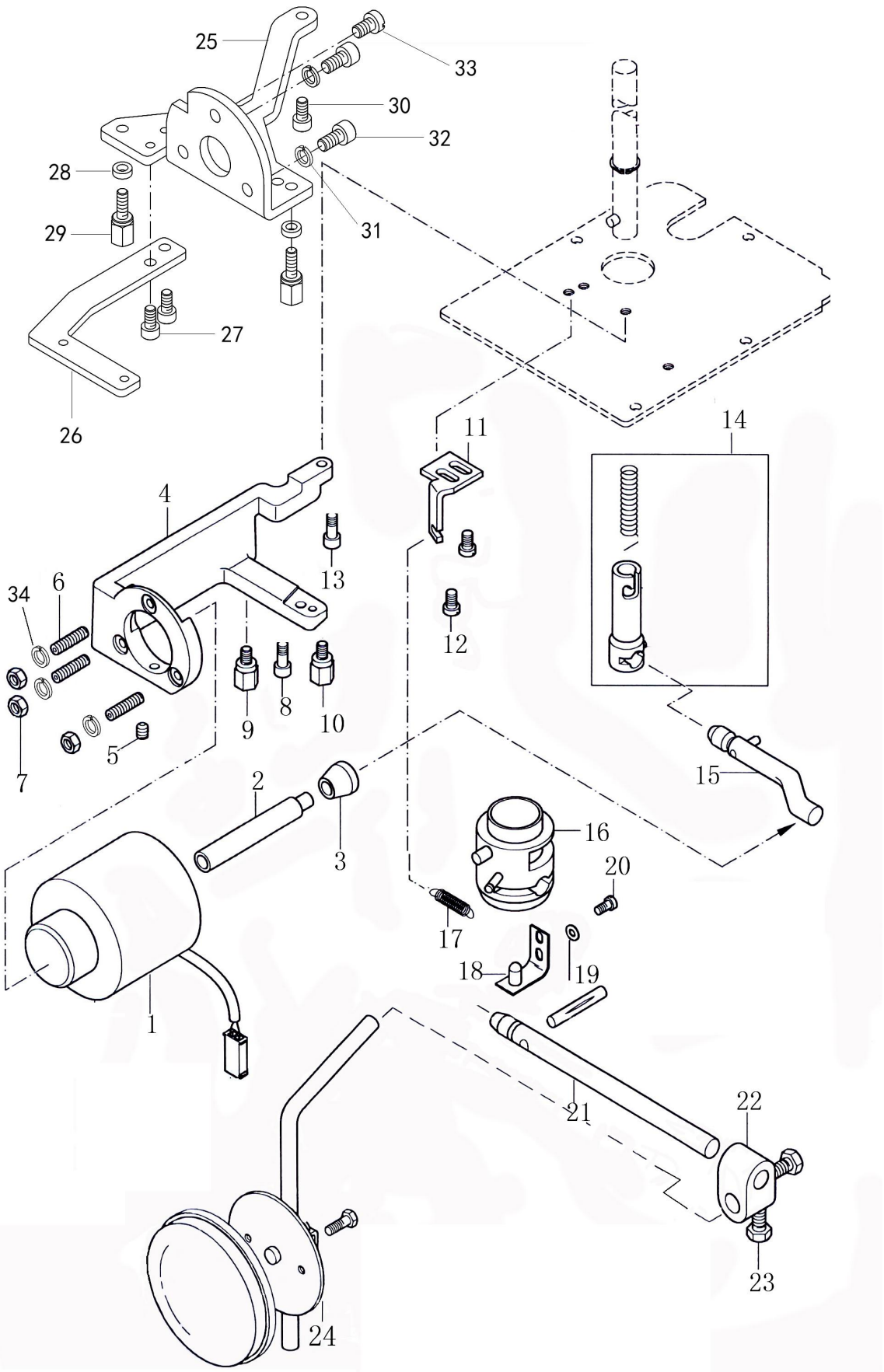
T. Thread trimming driving parts



U. Presser foot lifting solenoid parts

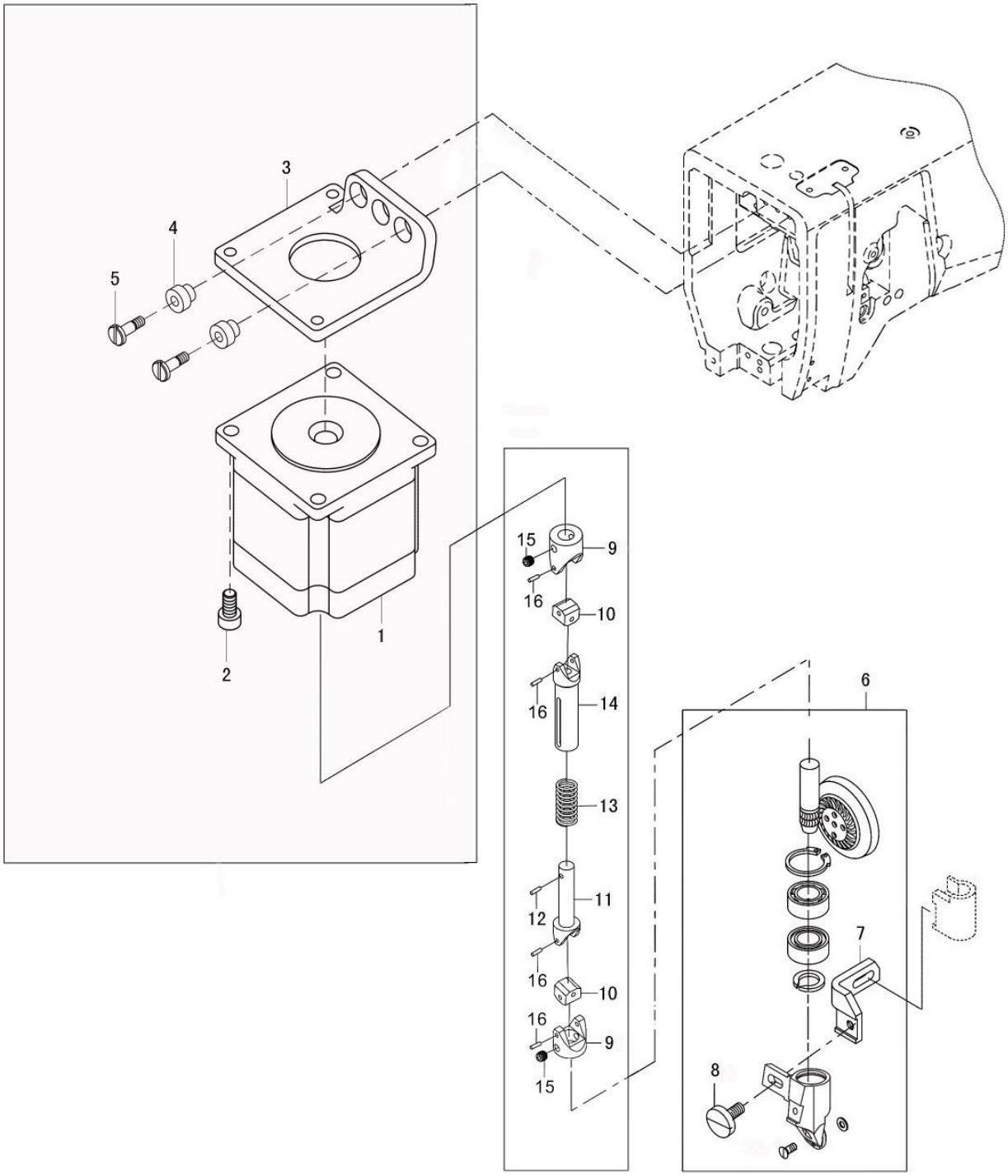
No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.19.346	Presser foot lifting solenoid	1	1
2	7.02.03.422	Link	1	1
3	7.02.16.411	Joint	1	1
4	7.02.13.372	Solenoid fixed seat	1	1
5	7.02.15.057	Locking screw	1	1
6	7.02.15.966	Screw	3	3
7	7.02.15.067	Nut	3	3
8	7.02.15.008	Screw M5X10	1	1
9	7.02.10.450	Support screw	1	1
10	7.02.10.451	Support screw（Short）	1	1
11	7.02.13.373	Sping fixed plate	1	1
12	7.02.15.972	Screw	2	2
13	7.02.15.053	Screw M5X12	1	1
14	7.02.13.374	Knee lever Coupling	1	1
15	7.02.13.376	Knee lever link	1	1
16	7.02.13.375	Knee lever joint assy.	1	1
17	7.02.17.414	Spring	1	1
18	7.02.17.415	Elastic slice assy.	1	1
19	7.02.18.071	Washer	2	2
20	7.02.15.026	Screw M4X6	2	2
21		Knee lever Rod		
22		Connector		
23		Screw		
24	7.02.21.461	Knee lever assy.		
25	7.02.13.372	Solenoid fixed seat	1	1
26	7.02.11.662	Fixed plate		1
27	7.02.15.803	Screw		2
28	7.02.09.122	Washer	2	2
29	7.02.10.450	Support screw	2	2
30	7.02.15.803	Screw	1	1
31	7.02.18.058	Washer	2	2
32	7.02.15.594	Screw	2	2
33	7.02.15.1066	Screw	1	1
34	7.02.18.058	Washer	3	3

U. Presser foot lifting solenoid parts



V. Upper feed parts for 1 needle

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.19.459	Upper feed step motor	1	
2	7.02.15.803	Motor mounting screw	3	
3	7.02.11.628	Motor fixed plate	1	
4	7.02.16.568	Rubber washer	2	
5	7.02.15.1097	Screw	2	
6	7.02.02.670	Roller presser foot	1	1
7	7.02.05.002	Connecting holder	1	1
8	7.02.15.011	Screw	1	1
9	7.02.01.376	Connector assy	2	
10		Connecting block	2	
11		Connecting shaft	1	
12		Pin	1	
13		Spring	1	
14		Connecting lever	1	
15		Screw	2	
16		Connecting pin	4	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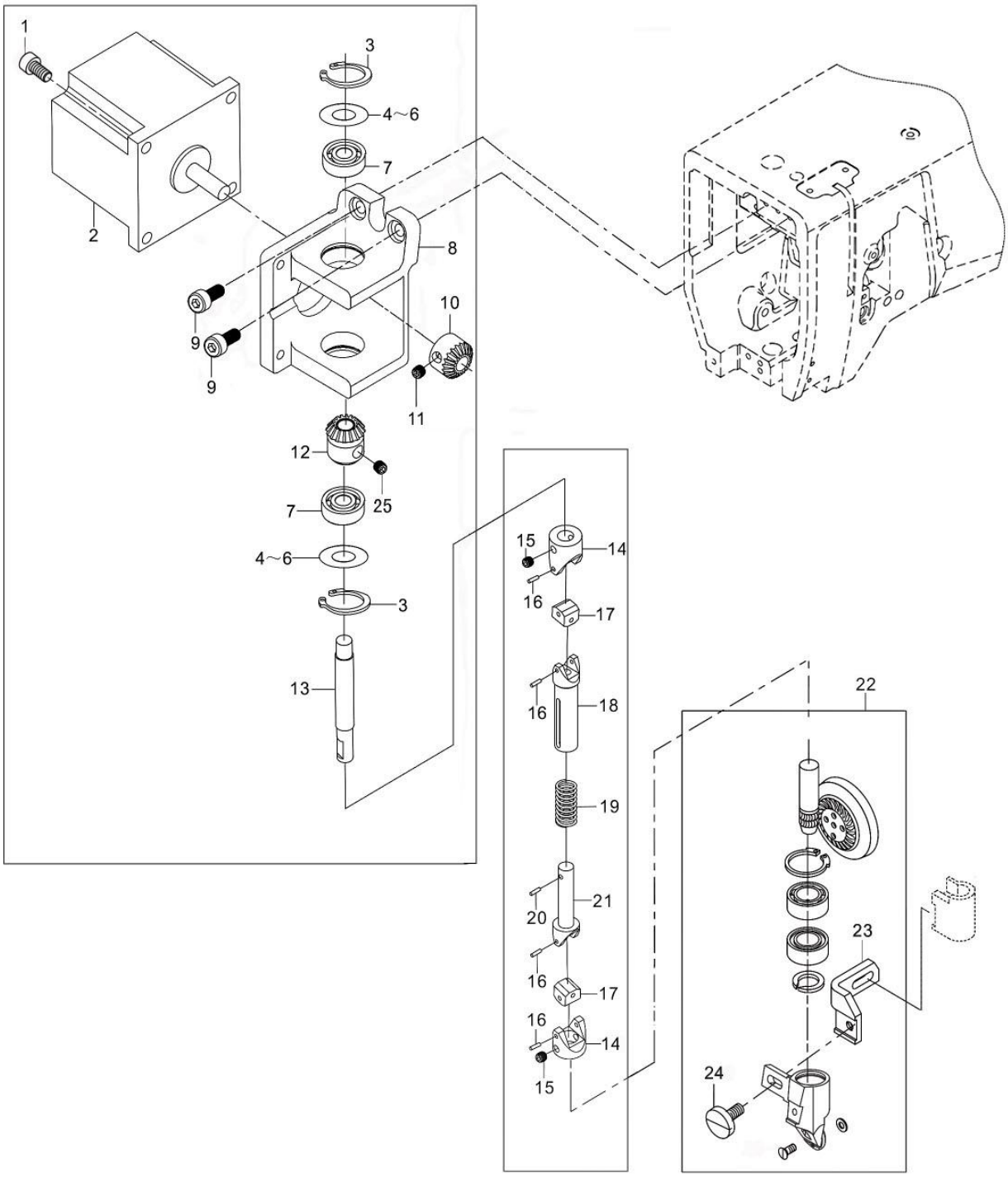
W. Upper feed parts for 2 needle

No.	Part No.	Name	1NEEDLE	2NEEDLE
1		Screw		3
2		Upper feed step motor		1
3		Retaining ring		2
4		Adjusting washer 0.15		1
5		Adjusting washer 0.30		1
6		Adjusting washer 0.50		1
7		Bearing		2
8		Upper feed support seat		1
9		Screw		2
10		Driven gear Ⅱ		1
11		Screw		2
12		Driven gear Ⅰ		1
13		Turning shaft		1
14		Connector		2
15		Screw		2
16		Connecting pin		4
17		Connecting block		2
18		Connecting lever		1
19		Spring		1
20		Pin		1
21		Connecting shaft		1
22	7.02.02.670	Roller presser foot		1
23		Connecting seat		1
24		Screw		1
25		Screw		2

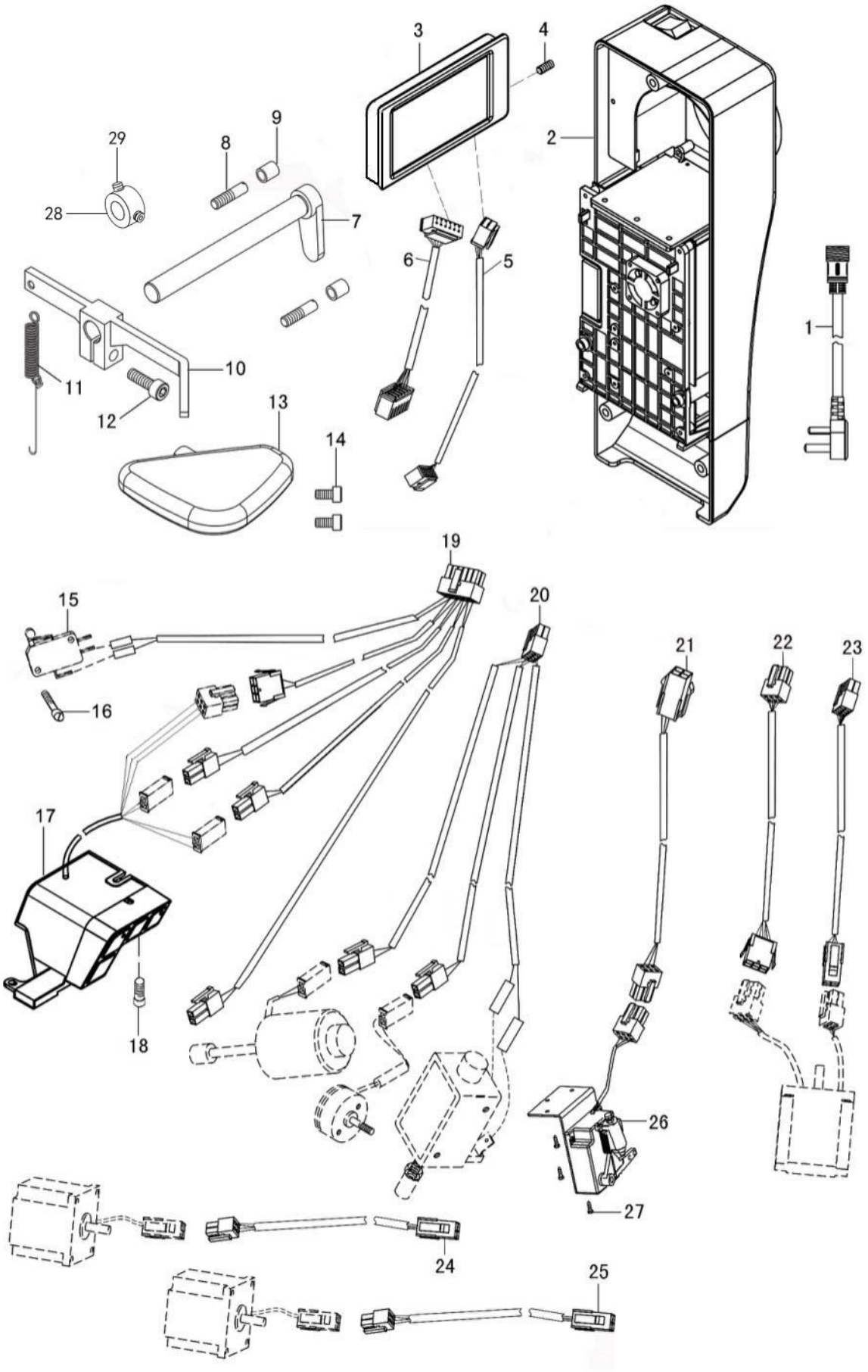
W. Upper feed parts for 2 needle



X. Electric control, backstitch lever parts

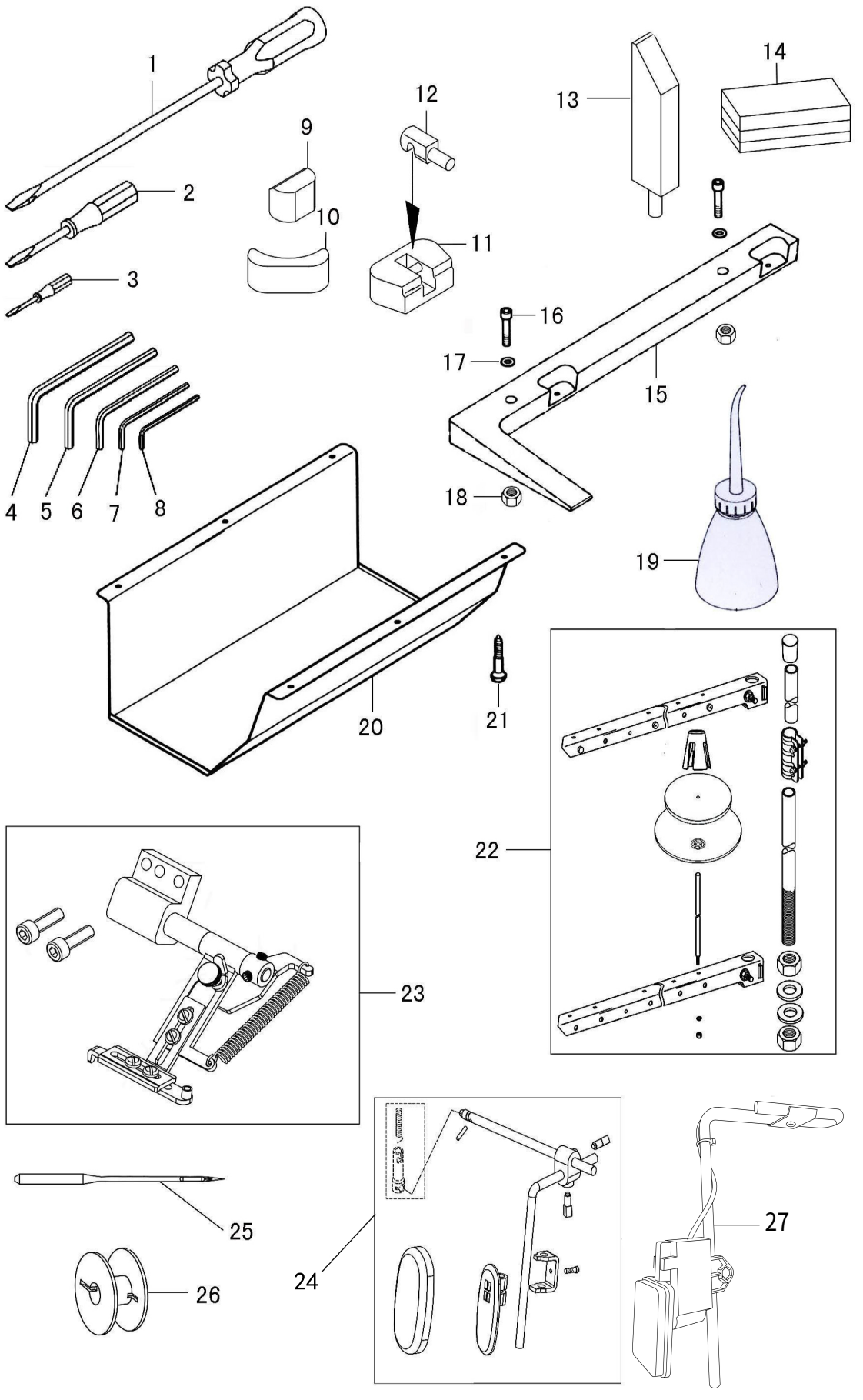
No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.19.463	Power transfer line	1	1
2	7.02.19.464	Control box	1	1
3	7.02.19.467	Touch screen panel	1	1
4	7.02.15.047	Screw	3	3
5		Panel pick-up pin box transfer line	1	1
6		Panel burning transfer line	1	1
7	7.02.05.596	Backstitch lever shaft	1	1
8	7.02.15.988	Backstitch lever restrict screw	2	2
9		Plastic bushing	2	2
10	7.02.05.595	Backstitch lever	1	1
11	7.02.17.351	Replacement spring	1	1
12	7.02.15.096	Screw	1	1
13	7.02.16.562	Backstitch lever handle	1	1
14	7.02.15.066	Screw	2	2
15	7.02.19.212	Backstitch switch	1	1
16	7.02.15.802	Screw	2	2
17	7.02.19.395	Head light assy.	1	1
18	7.02.15.063	Screw	2	2
19		Head light transfer line	1	1
20		Solenoid transfer line	1	1
21		Pedal transfer line	1	1
22		Vibrating needle step encoder line	1	1
23		Vibrating needle step transfer line	1	1
24		Upper feed step transfer line	1	1
25		Lower feed step transfer line	1	1
26		Pedal	1	1
27	7.02.15.520	Pedal mounting screw	3	3
28	7.02.09.130	Retaining ring	1	1
29	7.02.15.056	Screw	2	2

X. Electric control, backstitch lever parts



Y. Accessories

No.	Part No.	Name	1NEEDLE	2NEEDLE
1	7.02.21.003	Screw driver (Large)	1	1
2	7.02.21.002	Screw driver (Middle)	1	1
3	7.02.21.001	Screw driver (Small)	1	1
4	7.02.21.100	Inner hexagon spanner 5MM	1	1
5	7.02.21.099	Inner hexagon spanner 4MM	1	1
6	7.02.21.209	Inner hexagon spanner 3MM	1	1
7	7.02.21.098	Inner hexagon spanner 2.5MM	1	1
8	7.02.21.102	Inner hexagon spanner 2MM	1	1
9	7.02.21.463	Padding block	2	2
10	7.02.21.464	Rubber cushion	2	2
11	7.02.21.005	Hinge connection seat	2	2
12	7.02.21.004	Hinge pin	2	2
13	7.02.21.022	Head rest wood	1	1
14	7.02.21.020	Packing bag	1	1
15	7.02.21.224	Wooden support	1	1
16		Screw	2	2
17	7.02.18.040	Washer	4	4
18	7.02.15.067	Nut	2	2
19	7.02.21.028	Oil can (Middle)	1	1
20	7.02.21.46501	Oil reservior	1	1
21	7.02.21.033	Screw	6	6
22	7.02.21.468&469	Thread stand	1	1
23	7.02.01.357	Swing on guide assy.	1	1
24	7.02.21.461	Knee lever assy.	1	1
25	7.02.21.016	Needle	5	5
26	7.02.21.385	Bobbin	4	4
27	7.02.19.462	Knee lifter switch assy.	1	1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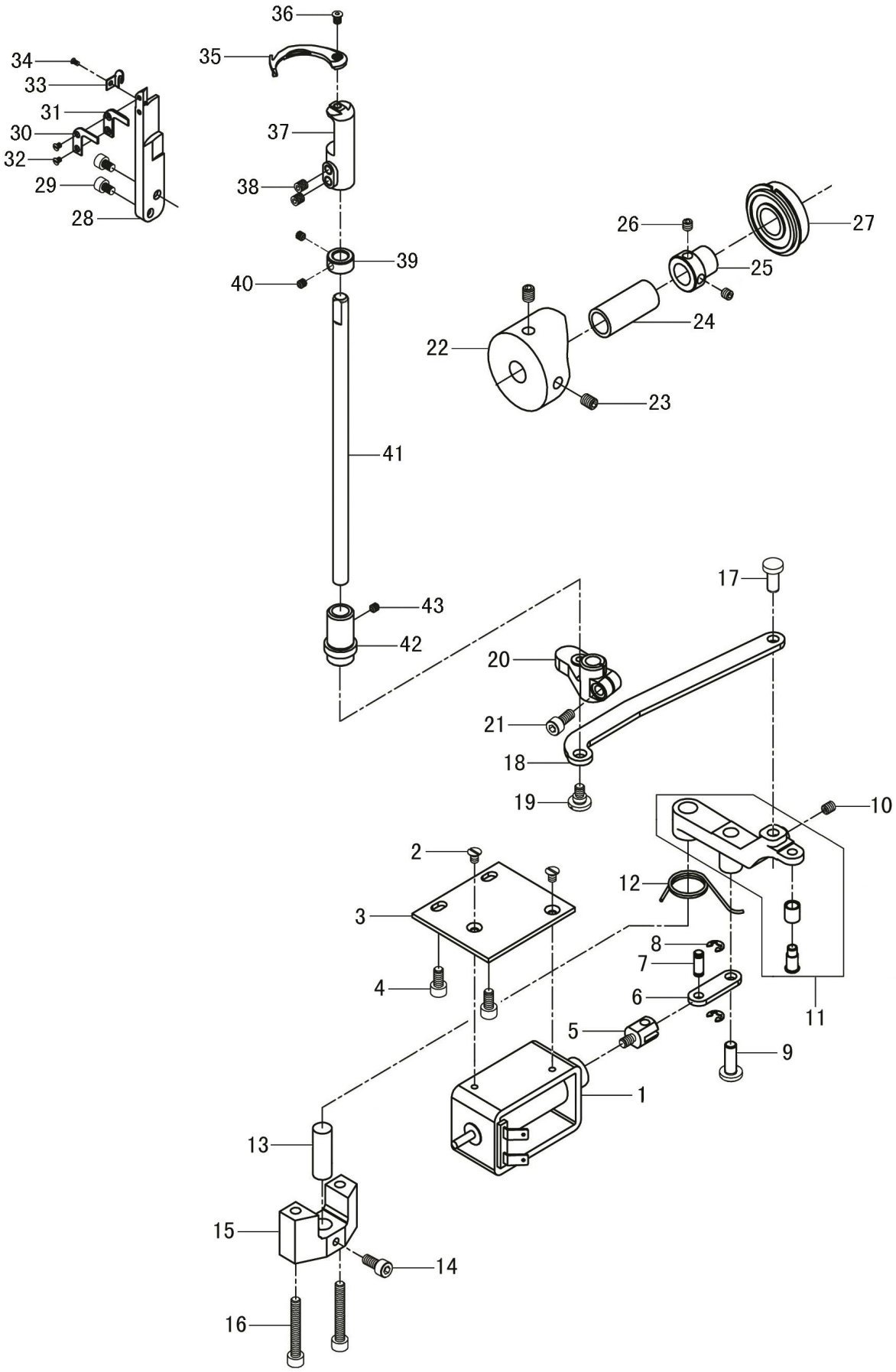
THREAD TRIMMING MECHANISM(Large hook)

No.	Part No.	Fig. No.	Name	Qty	Remark
1	7.02.19.391	AG2810-01	Thread trimming solenoid	1	
2	7.02.15.797	AG2110-02	Screw	2	M4×6
3	7.02.11.387	AG2110-03	Fixed plate	1	
4	7.02.15.803	AG2110-04	Fixed plate screw	2	GB/T70.1 M5×10
5	7.02.05.528	AG2810-16	Thread trimming solenoid joint	1	
6	7.02.11.601	AG2810-15	Solenoid connecting plate	1	
7	7.02.10.546	AG2810-17	Solenoid connecting pin	1	
8	7.02.18.031	RE000040	Split retaining ring	2	GB/T896 4
9	7.02.10.367	AG2110-14	Connecting lever pin	1	ø6×21
10	7.02.15.056	ZMH05002	Screw	2	M5×5
11	7.02.05.525	AG2810-08	Thread trimming vibrating lever assy.	1	
12	7.02.17.490	AG2810-18	Spring	1	
13	7.02.03.341	AG2110-09	Thread trimming vibrating lever shaft	1	
14	7.02.15.908	GL04-14-1	Screw	1	
15	7.02.13.293	AG2110-11	Thread trimming vibrating lever seat	1	
16	7.02.15.798	AG2110-12	Screw	2	M5×30
17	7.02.10.369	AG2110-19	Connecting lever pin	1	ø6×15.5
18	7.02.05.526	AG2810-13	Thread trimming connecting lever	1	
19	7.02.15.1091	AG2810-19	Screw	1	
20	7.02.06.471	AG2810-20	Thread trimming crank	1	
21	7.02.15.053	ZMJ05002	Screw	1	GB/T70.1 M5×12
22	7.02.06.470	AG2810-06	Thread trimming cam	1	
23	7.02.15.050	ZMH06002	Screw	2	M6×0.75×8
24	7.02.09.165	AG2810-07	Cam gap ring	1	
25	7.02.08.010	J4321-0A	Bearing bushing (left)	1	
26	7.02.15.056	ZMH05002	Screw	2	M5×5
27	7.02.04.012	BB6202ZZ	Bearing	1	6202-2ZNR
28	7.02.13.451	AG2810-22	Fixed knife seat	1	
29	7.02.15.1092	AG2810-23	Screw	2	GB/T70.1 M4×6
30	7.02.20.083	AG2810-25	Thread guard plate	1	
31	7.02.20.080	AG2810-26	Fixed knife	1	
32	7.02.15.1093	AG2810-27	Screw	2	
33	7.02.20.081	AG2810-29	Thread tension plate	1	
34	7.02.15.1094	AG2810-30	Screw	1	
35	7.02.20.082	AG2810-31	Movable knife	1	
36	7.02.15.1095	AG2810-32	Screw	1	
37	7.02.13.452	AG2810-33	Movable knife seat	1	
38	7.02.15.056	ZMH05002	Screw	2	M5×5
39	7.02.09.166	AG2810-38	Collar	1	
40	7.02.15.1096	AG2810-39	Screw	2	M4×3
41	7.02.03.506	AG2810-35	Movable knife shaft	1	
42	7.02.08.544	AG2810-36	Movable knife shaft bushing	1	
43	7.02.15.047	ZMH04001	Screw	1	M4×4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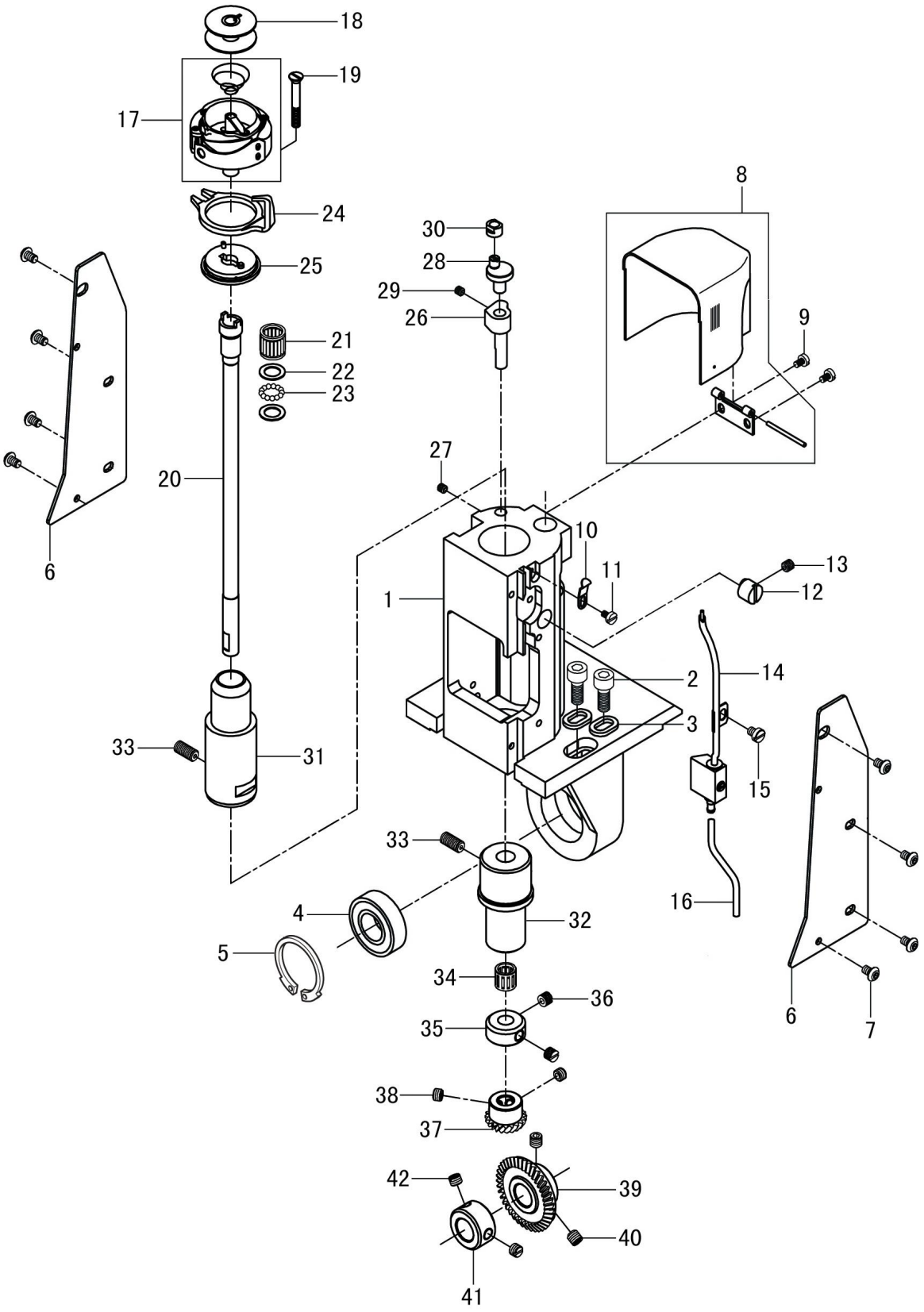
RIGHT SIDE BRACKET MECHANISM(Large hook)

No.	Part No.	Fig. No.	Name	Qty	Remark
1	7.02.13.45001	AG2808-16	Single needle side bracket	1	
2	7.02.15.965		Screw	2	
3	7.02.18.003		Washer	2	
4	7.02.04.110	AG2108-11	Ball bearing	2	6001-2Z
5	7.02.18.250	AG2108-15	Elastic retaining ring	2	28
6	7.02.11.60001	AG2808-19	Side cover	2	
7	7.02.15.973		Screw	8	
8	7.02.02.590	AG2808-21	Post cap assy.	1	
9	7.02.15.973		Screw	2	
10	7.02.17.350	AG2108-23	Spring plate	1	
11	7.02.15.433		Screw	1	
12	7.02.10.011		Adjusting pin	1	
13	7.02.15.056		Screw	1	
14	7.02.16.514	AG2809-51	Hook oil supply valve assy.	1	
15	7.02.15.022		Screw	1	M4×4.5
16	7.02.16.047		Oil tube	1	
17	7.02.02.591	AG2809-01	Hook assy.	1	
18	7.02.21.567	AG2809-02	Bobbin	1	
19	7.02.15.1090	AG2809-03	Screw	1	
20	7.02.03.505	AG2809-04	Hook shaft	1	
21	7.02.04.200	AG2809-05	Needle bearing	1	K10×13×13
22	7.02.18.410	AG2809-06	Washer	2	
23	7.02.04.100		Ball	13	2.5
24	7.02.02.592	AG2809-11	Rotating hook opener	1	
25	7.02.08.540	AG2809-12	Rotating hook opener eccentric bracket	1	
26	7.02.08.541	AG2809-13	Rotating hook opener bracket	1	
27	7.02.15.047	ZMH04001	Screw	1	M4×4
28	7.02.10.545	AG2809-15	Adjusting pin	1	
29	7.02.15.047	ZMH04001	Screw	1	M4×4
30	7.02.12.320	AG2809-17	Slide block	1	
31	7.02.08.542	AG2809-18	Bushing (Upper)	1	
32	7.02.08.543	AG2809-19	Bushing (Lower)	1	
33	7.02.15.064	ZMH06005	Screw	2	GB/T70.1 M6×12
34	7.02.04.009	BN081110	Needle bearing	1	K 8×11×10
35	7.02.09.115	91-175 328-92	Retaining ring	1	
36	7.02.15.054	ZMH06007	Screw	2	M6×0.75×5
37	7.02.07.011	J4025-0A	Gear (Small)	1	
38	7.02.15.054	ZMH06007	Screw	2	M6×0.75×5
39	7.02.07.012	J4026-0A	Gear (Large)	1	
40	7.02.15.050	ZMH06002	Screw	2	M6×0.75×8
41	7.02.09.007	J4014-0A	Collar	1	
42	7.02.15.054	ZMH06007	Screw	2	M6×0.75×5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