



TYPICAL

GT690D/691D

ELECTRONIC DIRECT DRIVE LOCKSTITCH BAR TACKER
ELECTRONIC DIRECT DRIVE LOCKSTITCH BUTTON SEWER

INSTRUCTION BOOK
PARTS CATALOGUE

XI'AN TYPICAL INDUSTRIES CO.,LTD.

Thank you very much for buying a our company's sewing machine. Before using your new machine, please read the safety instructions below and the explanations given in the instruction manual.

With industrial sewing machines, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up lever, and consequently there is always a danger of injury that can be caused by these parts. Follow the instructions from training personnel and instructors regarding safe and correct operation before operating the machine so that you will know how to use it correctly.



SAFETY INSTRUCTIONS

1. Safety indications and their meanings

This instruction manual and the indications and symbols that are used on the machine itself are provided in order to ensure safe operation of this machine and to prevent accidents and injury to yourself or other people.


The meanings of these indications and symbols are given below.

Indications


	DANGER	The instructions which follow this term indicate situations where failure to follow the instructions will almost certainly result in death or severe injury.
	CAUTION	The instructions which follow this term indicate situations where failure to follow the instructions could cause injury when using the machine or physical damage to equipment and surroundings.

Symbols




This symbol  (indicates something that you should be careful of. The picture inside the triangle.) indicates the nature of the caution that must be taken.
(For example, the symbol at left means "beware of injury".)



This symbol  indicates something that you must not do.



This symbol  indicates something that you must do. The picture inside the circle indicates the nature of the thing that must be done.
(For example, the symbol at left means "you must make the ground connection".)

2. Notes on safety

DANGER



Wait at least 5 minutes after turning off the power switch and disconnecting the power cord from the wall outlet before opening the face plate of the control box. Touching areas where high voltages are present can result in severe injury.

CAUTION

Environmental requirements



Use the sewing machine in an area which is free from sources of strong electrical noise such as high-frequency welders. Sources of strong electrical noise may cause problems with correct operation.



Any fluctuations in the power supply voltage should be within $\pm 10\%$ of the rated voltage for the machine. Voltage fluctuations which are greater than this may cause problems with correct operation.



The power supply capacity should be greater than the requirements for the sewing machine's electrical consumption. Insufficient power supply capacity may cause problems with correct operation.



The ambient temperature should be within the range of 5°C to 35°C during use. Temperatures which are lower or higher than this may cause problems with correct operation.



The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices. Excessively dry or humid environments and dew formation may cause problems with correct operation.



Avoid exposure to direct sunlight during use. Exposure to direct sunlight may cause problems with correct operation.



In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet. Lightning may cause problems with correct operation.

Installation



Machine installation should only be carried out by a qualified technician.



Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.



The sewing machine weighs approximately 56 kg. The installation should be carried out by two or more people.



Do not connect the power cord until installation is complete, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.



Hold the machine head with both hands when tilting it back or returning it to its original position. Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.



Install the safety covers to the machine head and motor.



If using a work table which has casters, the casters should be secured in such a way so that they cannot move.












Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.

Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea.



Keep the oil out of the reach of children.

CAUTION









Sewing

-  This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.
-  The sewing machine should not be used for any applications other than sewing.
-  Be sure to wear protective goggles when using the machine.
If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.
-  Turn off the power switch at the following times, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.
When threading the needle
When replacing the needle and bobbin
When not using the machine and when leaving the machine unattended
-  If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
-  Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.
-  Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.
-  If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest Brother dealer or a qualified technician.
-  If the machine develops a problem, contact your nearest Brother dealer or a qualified technician.

Cleaning

-  Turn off the power switch before carrying out cleaning, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.
-  Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.
Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea.
Keep the oil out of the reach of children.

Maintenance and inspection

-  Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
-  Ask your Brother dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
-  Turn off the power switch and disconnect the power cord from the wall outlet at the following times, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.
When carrying out inspection, adjustment and maintenance
When replacing consumable parts such as the rotary hook
-  If the power switch needs to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.
-  Hold the machine head with both hands when tilting it back or returning it to its original position.
Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.
-  Use only the proper replacement parts as specified by our company's.
-  If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.
-  Any problems in machine operation which result from unauthorized modifications to the machine will not be covered by the warranty.

3.Warning labels

The following warning labels appear on the sewing machine.

Please follow the instructions on the labels at all times when using the machine.If the labels have been removed or are difficult to read, please contact your nearest dealer.

1



2

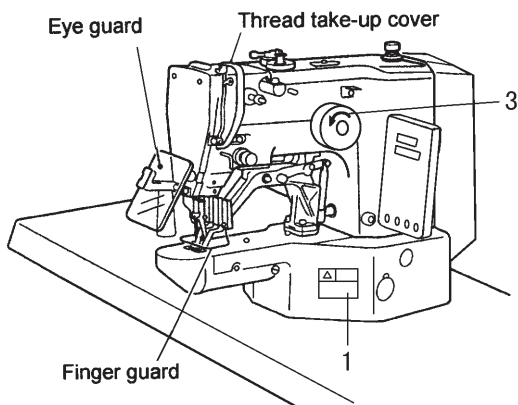


Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.

3

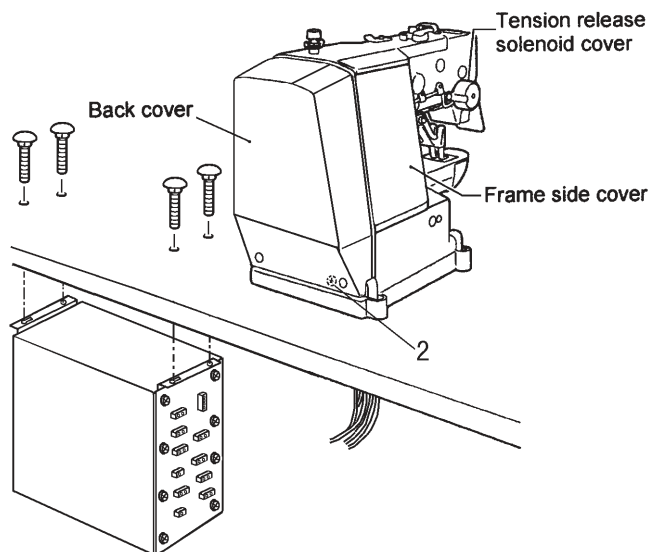


Direction of operation

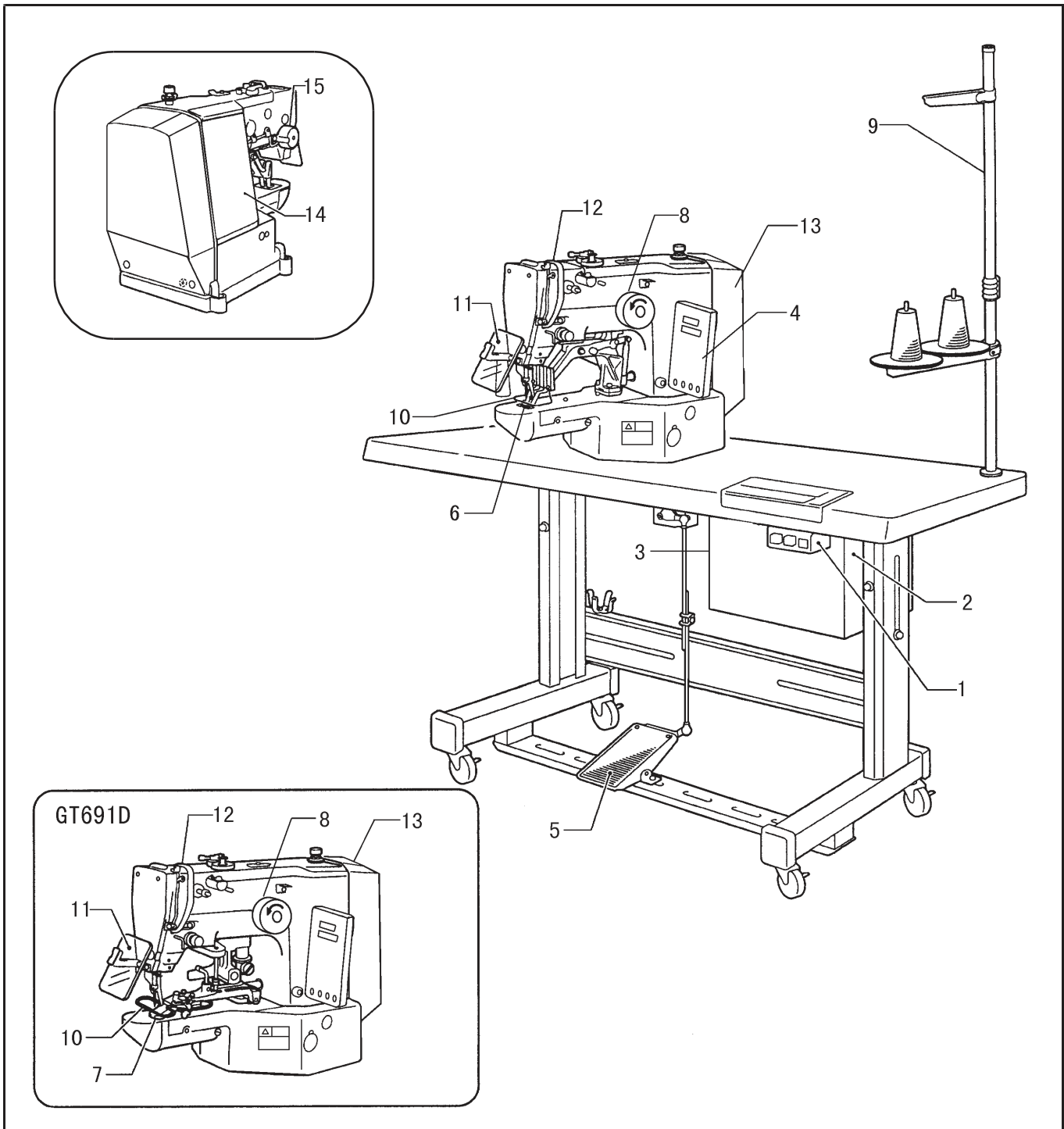


Safety devices:

- (A)Finger guard
- (B)Eye guard
- (C)Tension release solenoid cover
- (D)Thread take-up cover
- (E)Frame side cover
- (F)Back cover,etc.



1. NAMES OF MAJOR PARTS



(1) Power switch

(2) Control box

(3) SD slot

(4) Operation panel

(5) Foot switch

(6) Work clamp (GT690D)

(7) Button clamp (GT691D)

(8) Pulley

(9) Cotton stand

Safety devices

(10) Finger guard

(11) Eye guard

(12) Thread take-up cover

(13) Back cover

(14) Frame side cover

(15) Tension release solenoid cover

2. SPECIFICATIONS

	GT690D Electronic direct drive lockstitch bar tacker		GT691D Electronic direct drive lockstitch button sewer
	-1	-2	
	Ordinary materials	Denim	
Stitch formation	Single needle lock stitch		
Maximum sewing speed	3,200rpm		2,700rpm
Pattern size(X×Y)	40×30mm max.		6.4×6.4mm max.
Dimensions of buttons that can be sewn			Outer diameter of button 8 – 30 mm (Use the optional button clamp B for diameters of 20 mm or greater.)
Feed mechanism	Y-0 intermittent feed mechanism (pulse-motor driven mechanism)		
Stitch length	0.1–12.7mm		
Number of stitches	Variable (Refer to "Program List" for details on the number of stitches for sewing patterns that are already preset.)		
Maximum stitch number	400,000 stitches		
Work clamp lifter	Pulse-motor driven mechanism		
Work clamp height Button clamp height	17mm max.		13mm max.
Rotary hook	Shuttle hook		Shuttle hook
Wiper device	Standard equipment		
Thread trimmer device	Standard equipment		
Thread nipper device	Standard equipment		
Data storage method	Flash memory (Any sewing pattern can be added using SD card)		
Number of user programs	50		
Number of cycle programs	10×80		
Number of stored data	89 sewing patterns are set already		35 sewing patterns are set already
Motor	AC servo motor 450 W		
Power source	Single phase 100V/110V/220V 50/60Hz		

3. INSTALLATION



CAUTION



Machine installation should only be carried out by a qualified technician.



Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.



The sewing machine head weighs approximately 56 kg. The installation should be carried out by two or more people.



Do not connect the power cord until installation is complete, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.



Hold the machine head with both hands when tilting it back or returning it to its original position. Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.



All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cable or secure it too firmly staples, otherwise there is the danger that fire or electric shocks could occur.



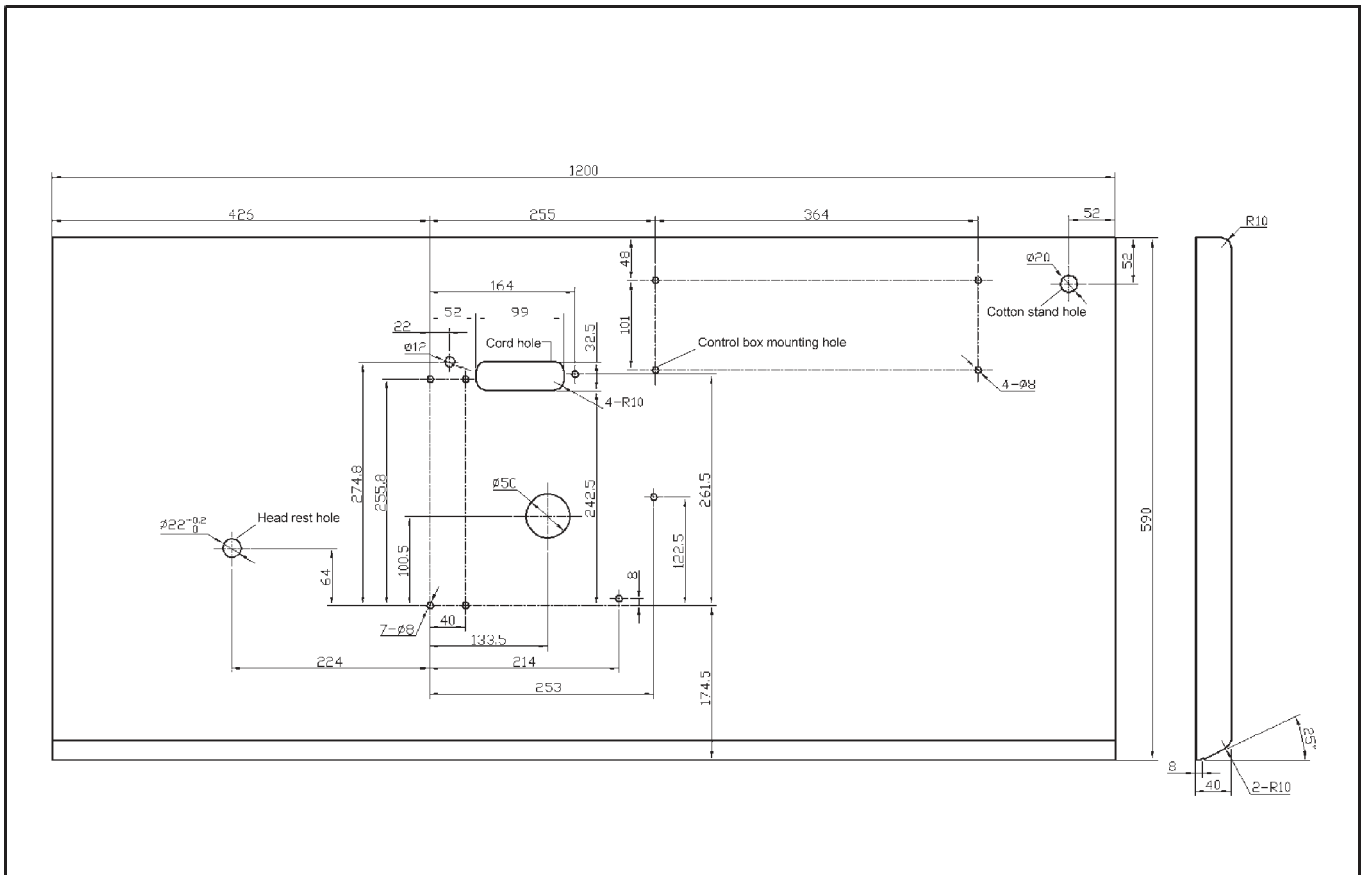
Be sure to connect the ground. If the ground connection is not secure, you run the risk of receiving a serious electric shock, and problems with correct operation may also occur.



Install the safety covers to the machine head and motor.

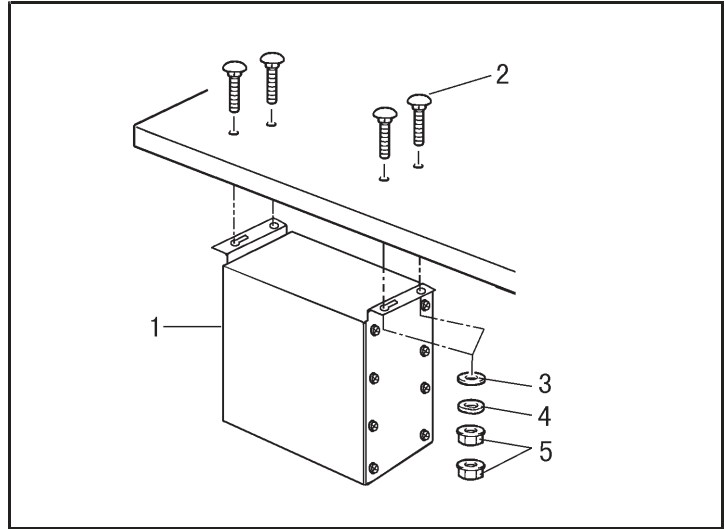
3-1. Table processing diagram

■ The thickness of the table should be at least 40 mm, and it should be strong enough to bear the weight and vibration of the sewing machine.

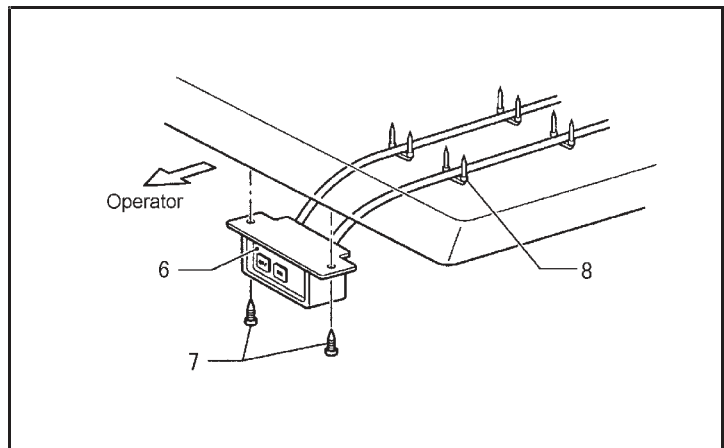


3-2. Installing the control box

- (1) Control box
- (2) Bolts [4 pcs]
- (3) Spacers [4 pcs]
- (4) Plain washers [4 pcs]
- (5) Nuts [8 pcs]

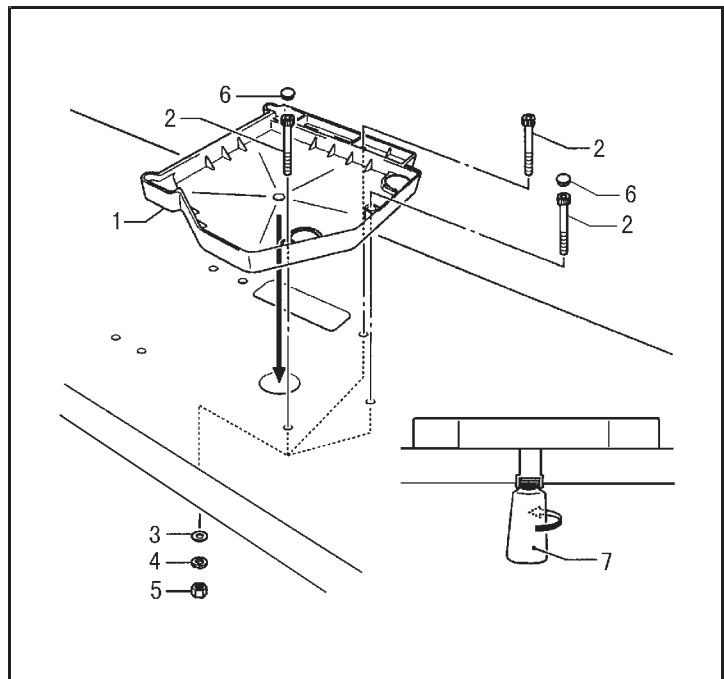


- (6) Power switch
- (7) Screws [2 pcs]
- (8) Staples [4 pcs]



3-3. Installing the oil pan

- (1) Oil pan
- (2) Bolts [3 pcs]
- (3) Plain washers [3 pcs]
- (4) Spring washers [3 pcs]
- (5) Nuts [3 pcs]
- (6) Rubber caps [2 pcs]
- (7) Oiler



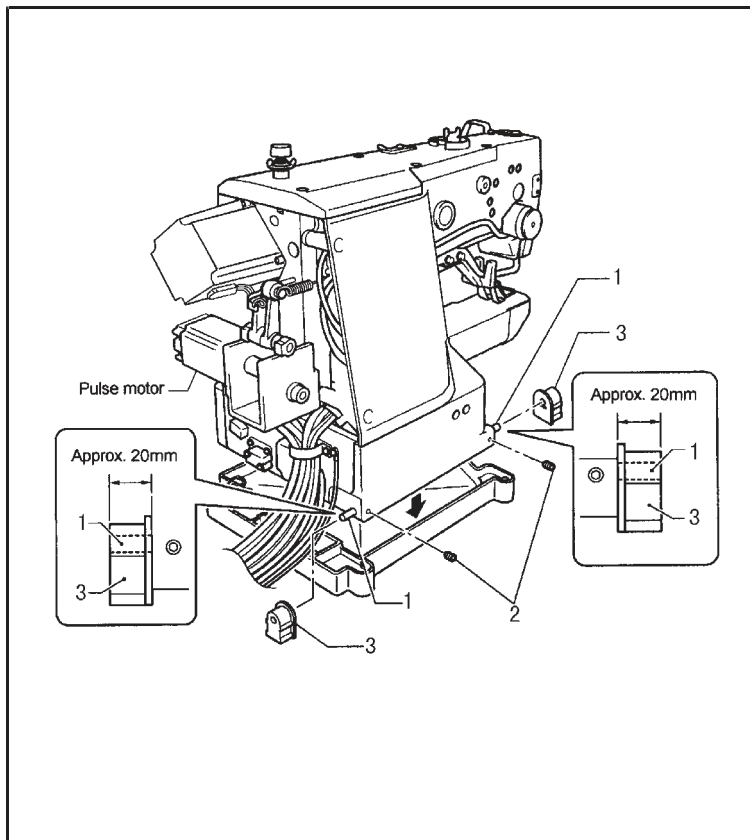
3-4. Installing the machine head

- (1) Pins [2 pcs]
- (2) Set screws [2 pcs]
- (3) Rubber cushion assembly [2 pcs]

Place the machine head gently on top of the oil pan and the rubber cushions.

Note:

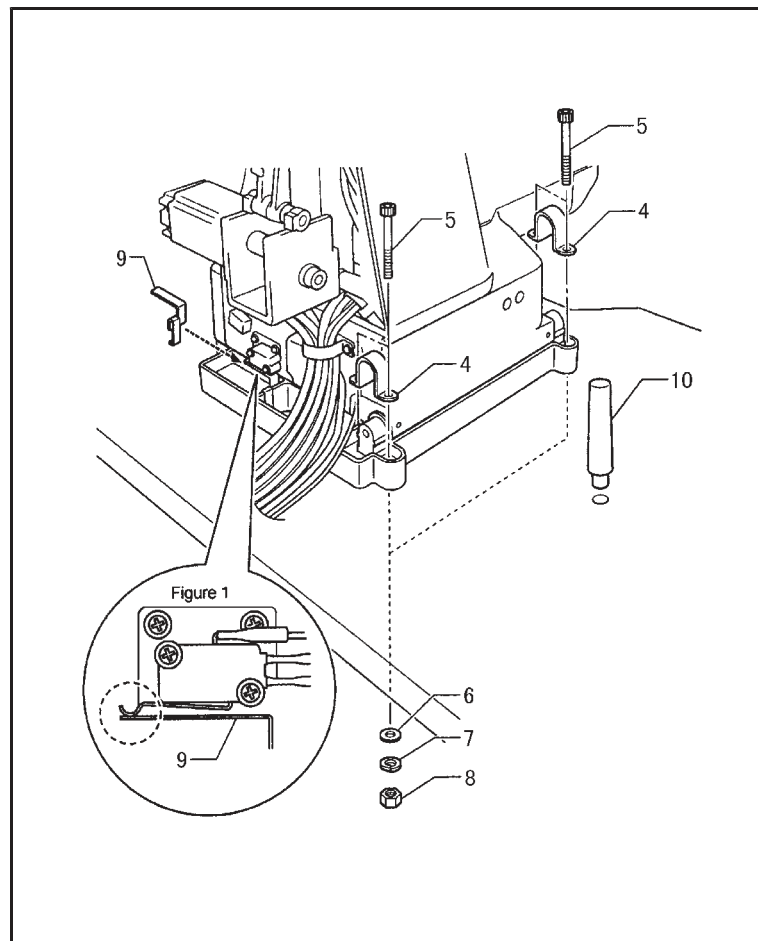
- Be careful not to clamp any cords between the machine head and the oil pan.
- When holding the machine head, do not hold it by the pulse motor, otherwise it may damage the pulse motor.



- (4) Hinge holders [2 pcs]
- (5) Bolts [4 pcs]
- (6) Plain washers [4 pcs]
- (7) Spring washers [4 pcs]
- (8) Nuts [4 pcs]
- (9) Head spring
- (10) Head rest

Note:

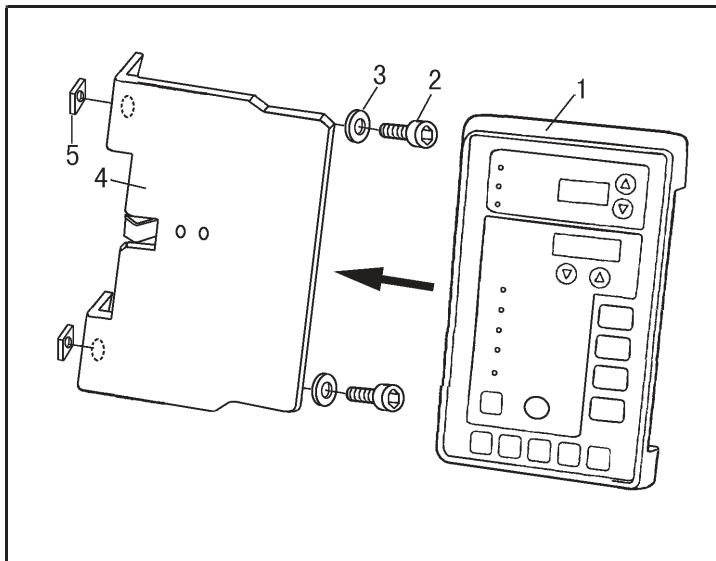
- Check that the machine head switch is turned on as shown in Figure 1.
- Tap the head rest (10) securely into the table hole.



3-5. Installing the operation panel

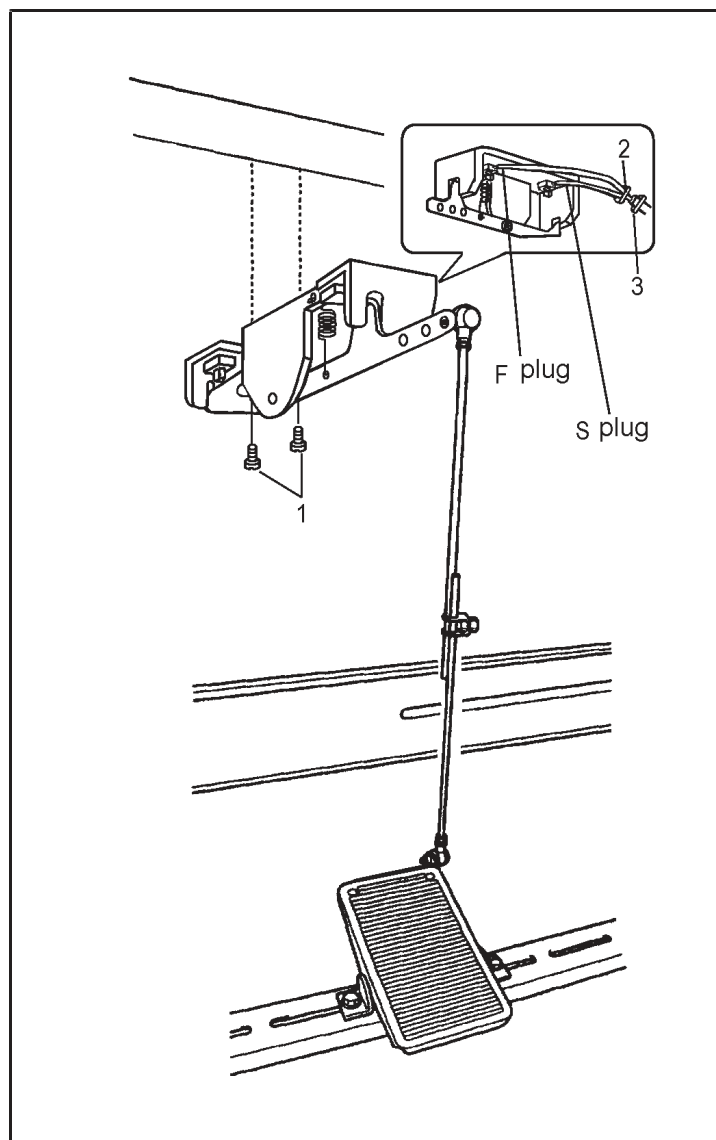
fix plate (4) on the machine head insert panel (1) as the arrow indicated

- (1) panel
- (2) screw [2 pcs]
- (3) cushion [2 pcs]
- (4) plate
- (5) rubber cushion



3-6. Installing the treadle unit

- (1) screw [2 pcs]
- (2) wire holder [2 pcs]
- (3) wire holder [2 pcs]

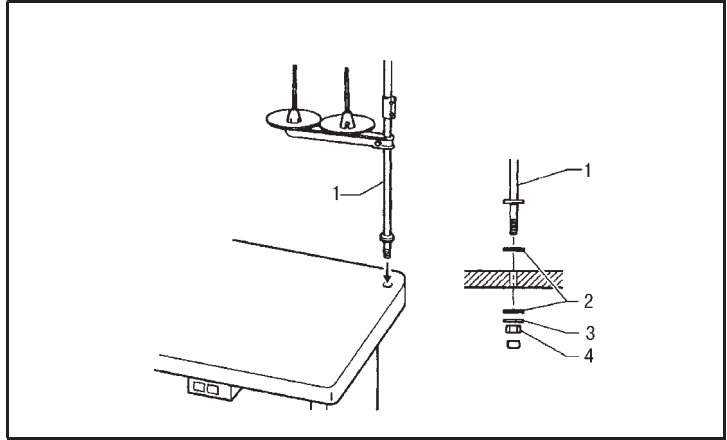


3-7. Installing the cotton stand

(1) Cotton stand

Note:

Securely tighten the nut (4) so that the two rubber cushions (2) and the washer (3) are securely clamped and so that the cotton stand (1) does not move.



3-8. Installing the button tray (GT691D)

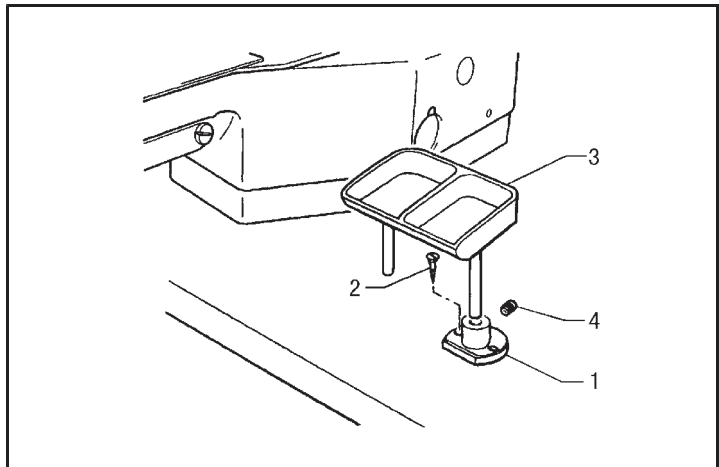
Install the button tray at a place convenient for operation.

(1) Button tray holder

(2) Screws [2 pcs]

(3) Button tray

(4) Set screw



3-9. Installing the eye guard



CAUTION



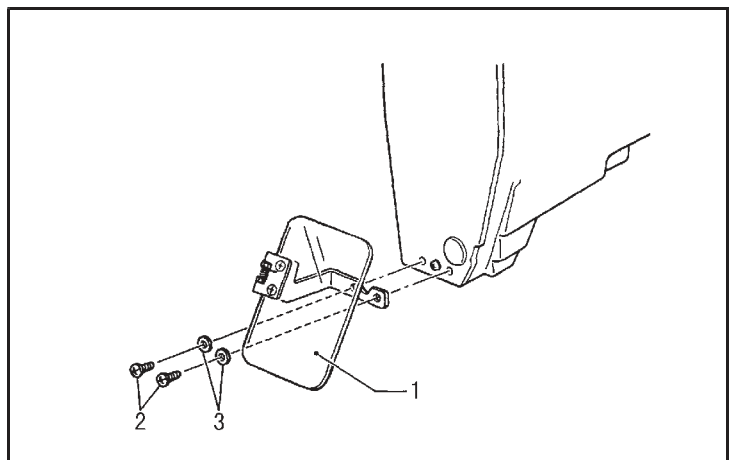
Attach all safety devices before using the sewing machine.

If the machine is used without these devices attached, injury may result.

(1) Eye guard assembly

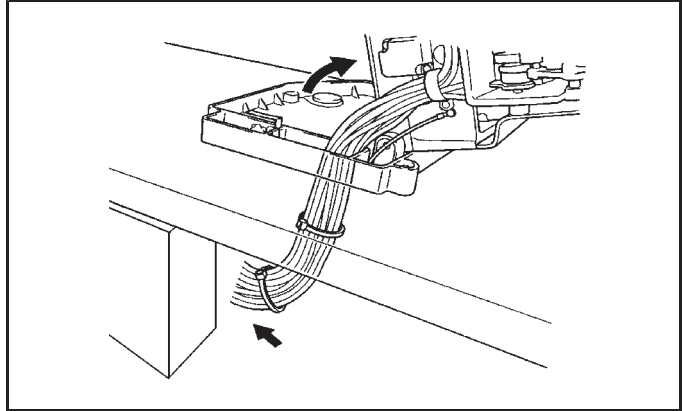
(2) Screws [2 pcs]

(3) Plain washers [2 pcs]



3-10. Connecting the cords

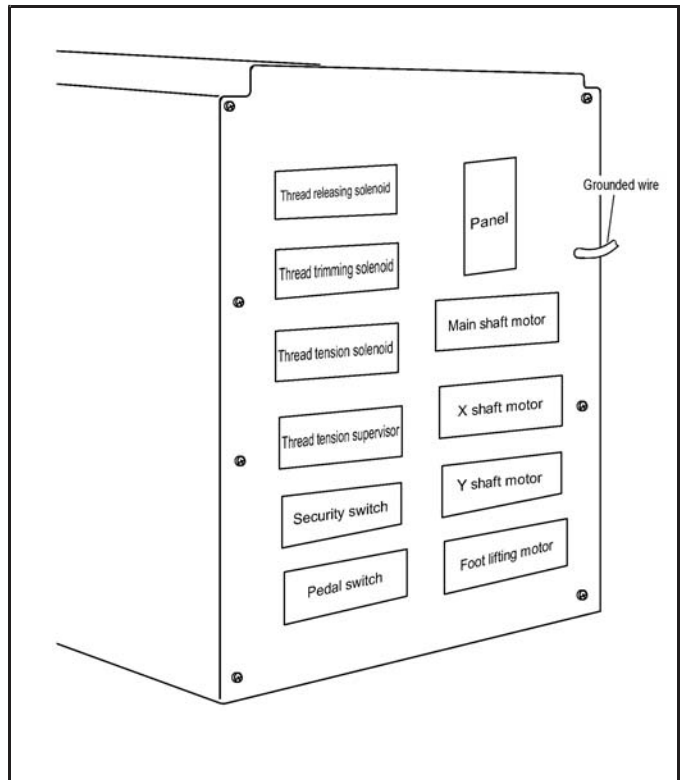
1. Gently tilt back the machine head.
2. Pass the cord bundle through the hole in the work table.
3. Loosen the two screws (1), and then open the cord presser plate (2) in the direction of the white arrow and pass the cord bundle through the opening.
4. Securely connect the connectors as indicated in the table below.



Note:

Check that the connector is facing the correct way, and then insert it firmly until it locks into place.

Secure the cables with cable ties and cord clamps, while being careful not to pull on the connector.

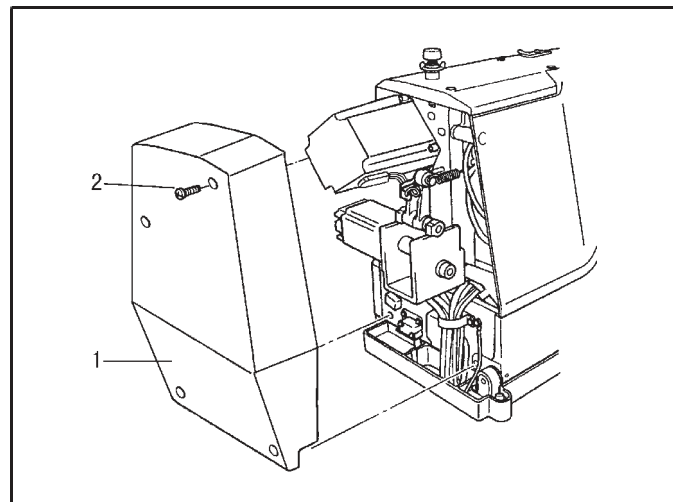


3-11 Installing the back cover

- (1) Back cover
- (2) Screws [4 pcs]

Note:

Be careful not to clamp the cords when installing the back cover (1).



3-12.Lubrication



CAUTION



Do not connect the power cord until lubrication has been completed, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.

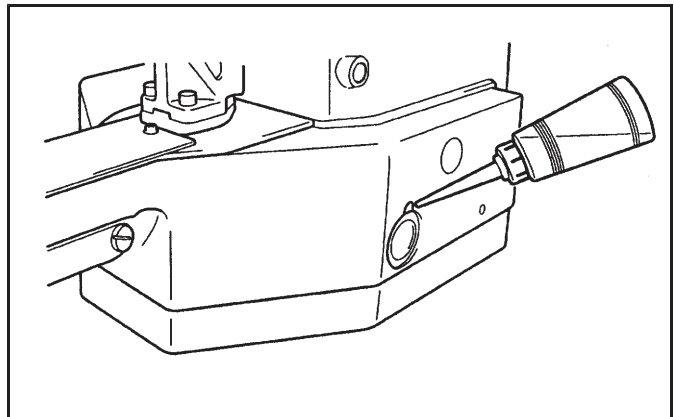
The sewing machine should always be lubricated and the oil supply replenished before it is used for the first time, and also after long periods of non-use.

Use only the lubricating oil specified by our company's.

1. Fill the oil tank with oil.

Note

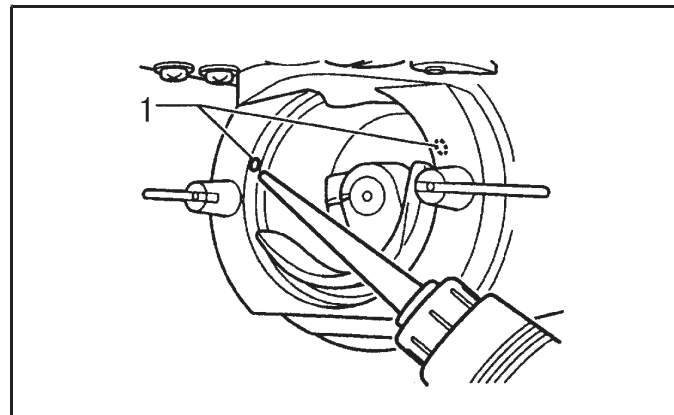
Fill the machine with oil when the oil level is down to about one-third full in the oil sight glass. If the oil drops below this level, there is the danger that the machine may seize during operation.



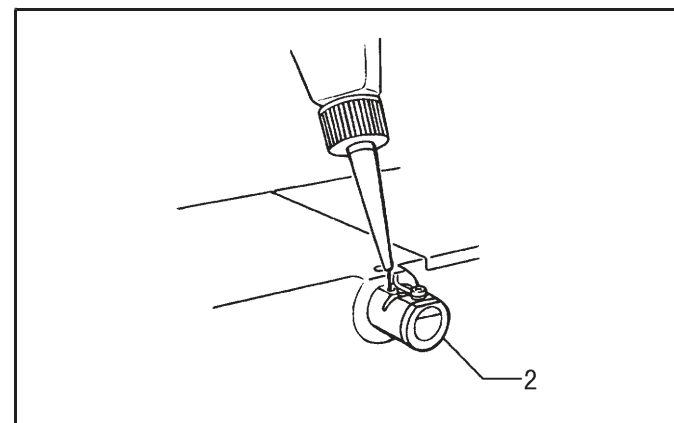
2. Pour oil in through the two holes (1) of the shuttle race base assembly so that the felt is lightly moistened.

Note:

If there is no more oil on the felt of the shuttle race base assembly, problems with sewing may result.



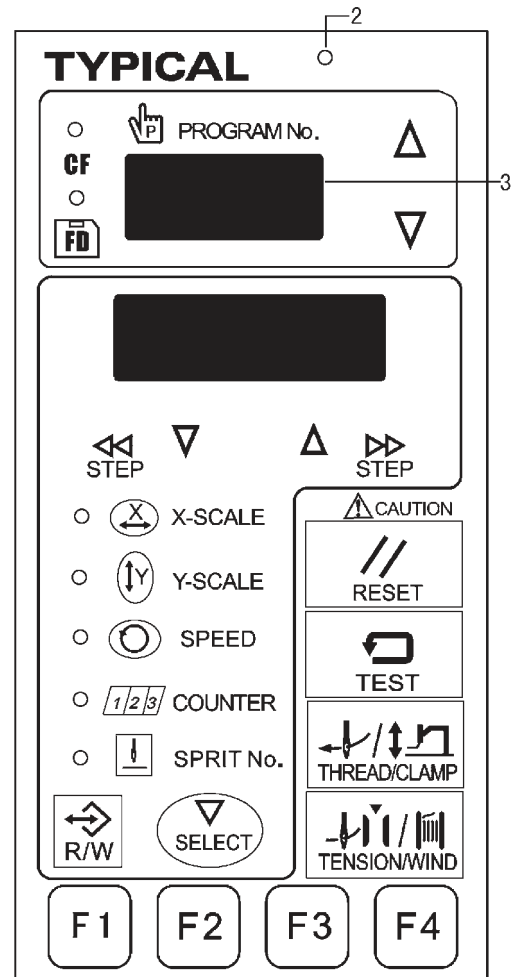
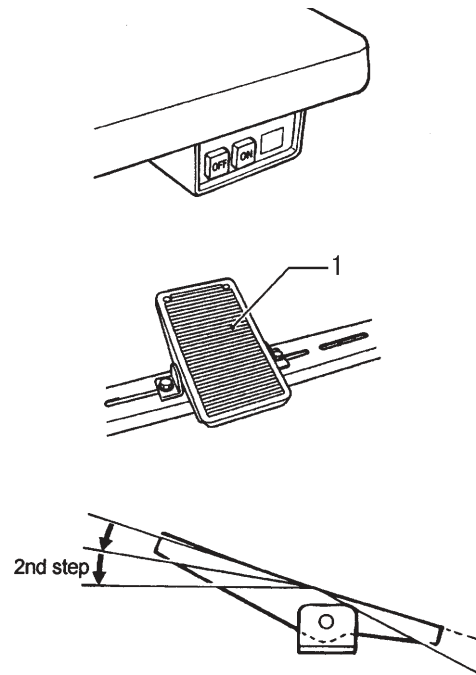
3. If using the liquid cooling tank (2), fill it with silicon oil (100 mm² /s).



3-13. Starting up

1. Turn on the power switch.

2. Depress the foot switch (1) to the 2nd step.
The feed mechanism will move to the home position and the work clamp / button clamp will rise.



4. PREPARATION BEFORE SEWING

4-1. Installing the needle

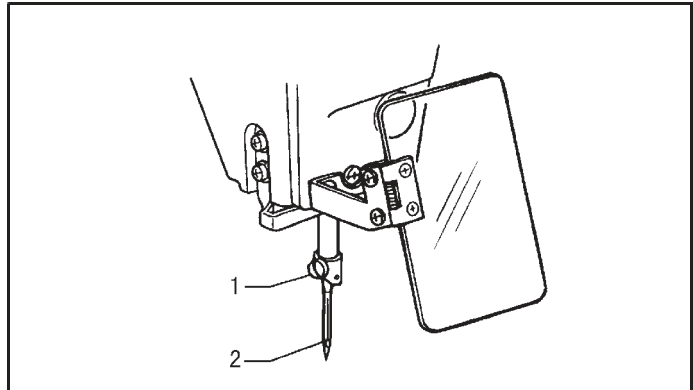


CAUTION



Turn off the power switch before installing the needle, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

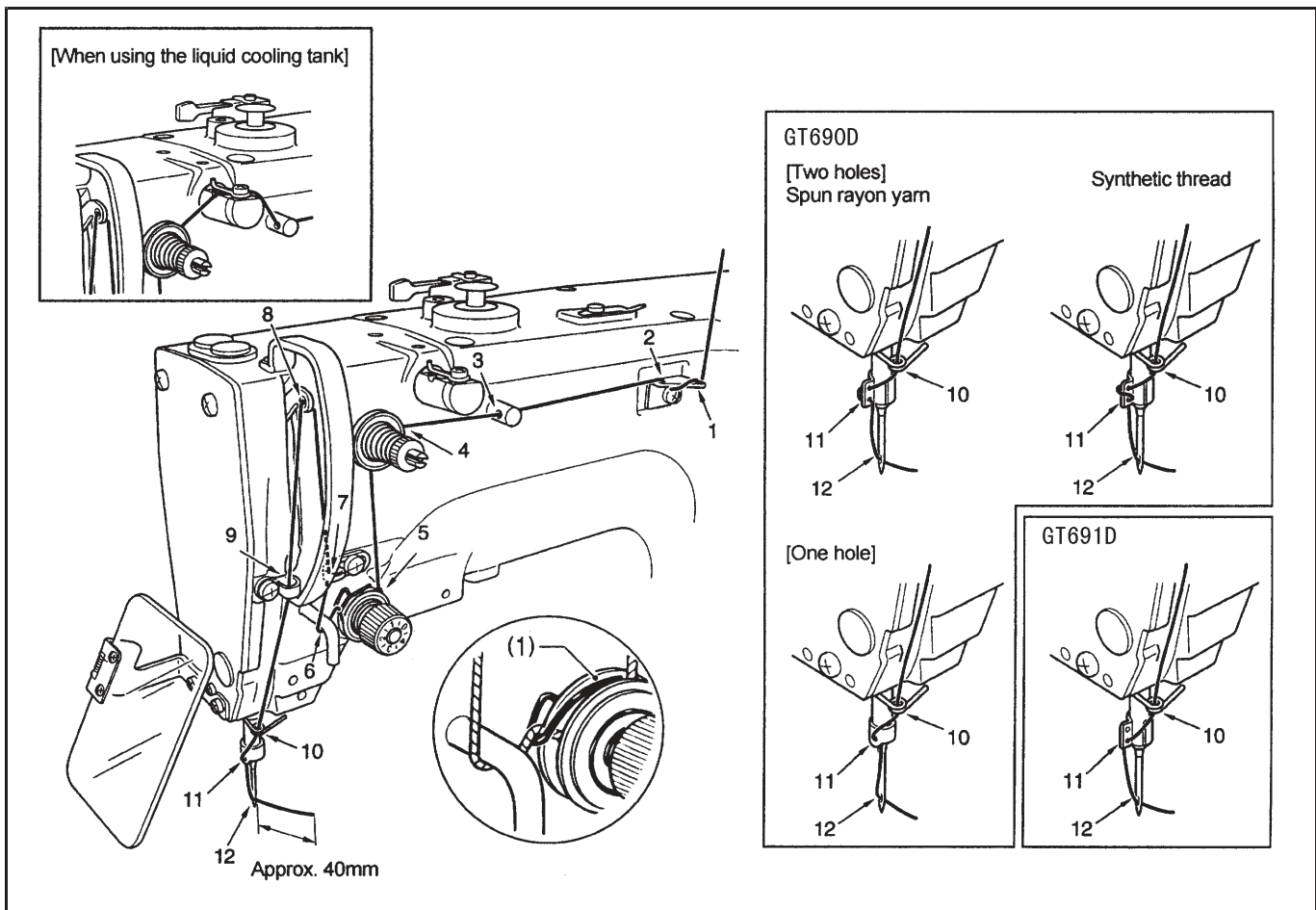
1. Loosen the set screw (1).
2. Insert the needle (2) in a straight line as far as it will go, making sure that the long groove on the needle is at the front, and then securely tighten the screw (1).



4-2. Threading the upper thread

Thread the upper thread correctly as shown in the illustration below.

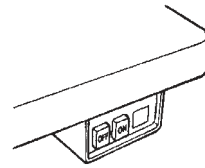
* When using threading mode for threading, the tension discs (1) will open so that the thread can be threaded more easily.



<Threading mode>

Threading mode is safe because the sewing machine will not start even when the foot switch is depressed.

1. Turn on the power switch.



- 2. ● The work clamp / button clamp will lower
- The tension discs will open.



Press the THREAD/CLAMP key.

TYPICAL

All indicators switch off
 THREAD/CLAMP indicator lights
 Menu indicators switch off

3. Threading the thread.

- When 5 minutes have passed, the buzzer will sound and the tension discs will close.

4. Ending threading mode

Press the THREAD/CLAMP key.

- The work clamp/button clamp will return to where it was before threading mode was started.



THREAD/CLAMP indicator switches off

4-3. Winding the lower thread

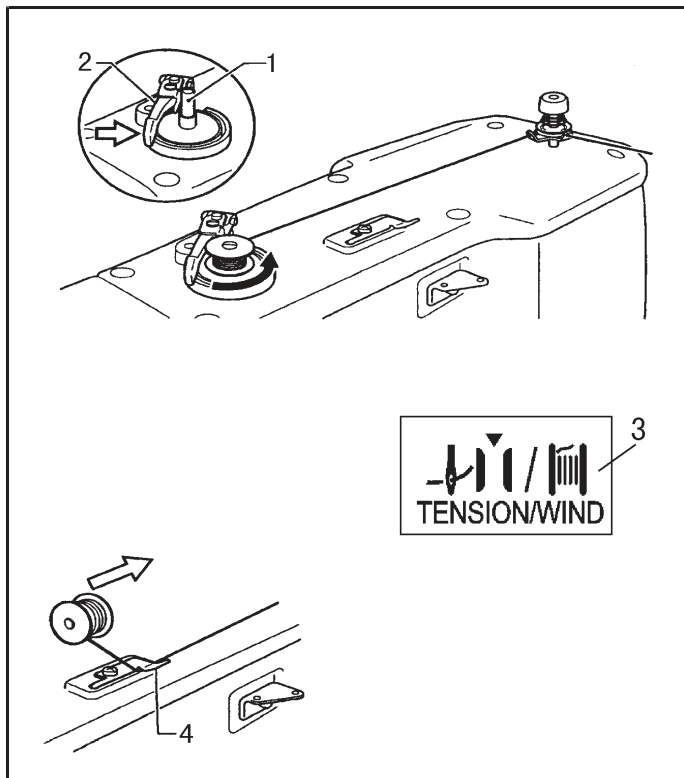


CAUTION



Do not touch any of the moving parts or press any objects against the machine while winding the lower thread, as this may result in personal injury or damage to the machine.

1. Place the bobbin onto the bobbin winder shaft (1).
2. Thread the thread as shown in the illustration, wind the thread around the bobbin several times, and then press the bobbin presser arm (2).
3. Turn on the power switch.
4. Depress the foot switch to the second step. The feed mechanism will move to the home position.
5. Check that the needle is not touching the work clamp, and then while pressing the TENSION WIND key (3), depress the foot switch to the second step.
6. Release the TENSION WIND key (3) after the machine starts operating, and keep depressing the foot switch until the lower thread stops being wound onto the bobbin. (If you release the foot switch before winding is complete, and then depress it again while pressing the TENSION/WIND key (3), winding will start again.)
7. Once winding of the set amount of lower thread (80 – 90% of the bobbin capacity) is completed, the bobbin presser arm (2) will return automatically.
8. Remove the bobbin, hook the thread onto the knife (4), and then pull the bobbin in the direction of the arrow to cut the thread.



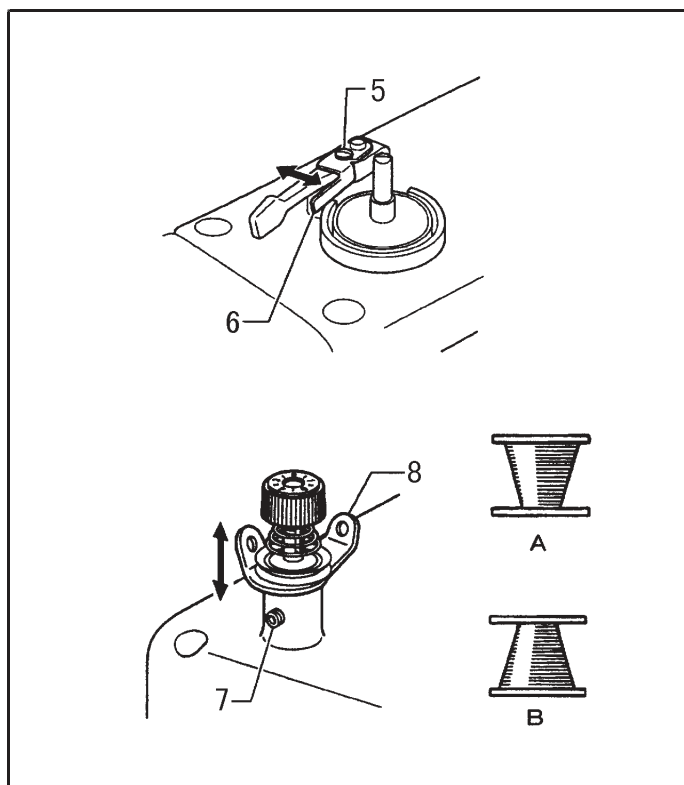
Adjusting the bobbin winding amount

Loosen the screw (5) and move the bobbin presser (6).

If the thread winds onto the bobbin unevenly

Loosen the set screw (7) and move the bobbin wider tension assembly (8) up and down to adjust.

* For case A, move the bobbin winder tension assembly (8) down, and for case B, move it upward.



4-4. Thread nipper device

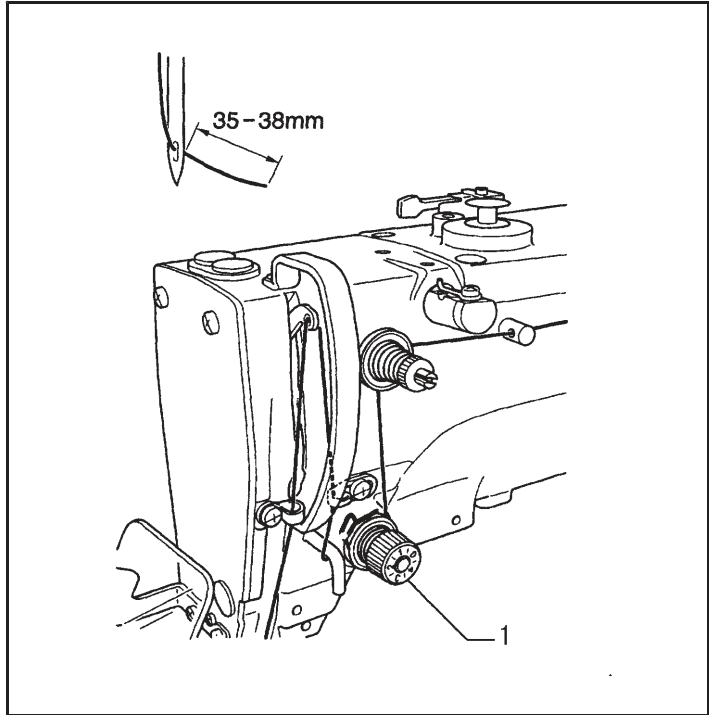
This is used to stop the thread from pulling out at the sewing start, and at times when skipped stitches might easily occur. The thread nipper device operates when memory switch no. 500 is set to "ON". However, some limitations apply.

* The default setting for this memory switch is "OFF".

[Notes on use]

1. When using the thread nipper device, turn the tension nut (1) (sub-tension) to adjust the upper thread trailing length to 35 – 38 mm

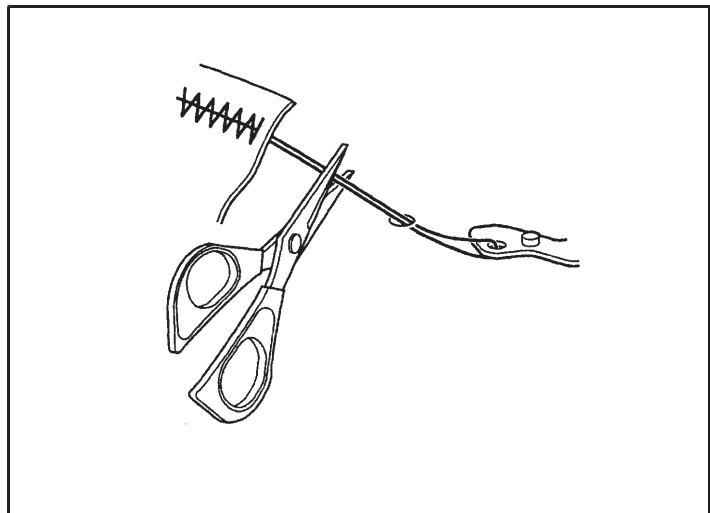
* Adjust the upper thread trailing length to less than 40 mm after replacing the upper thread also.



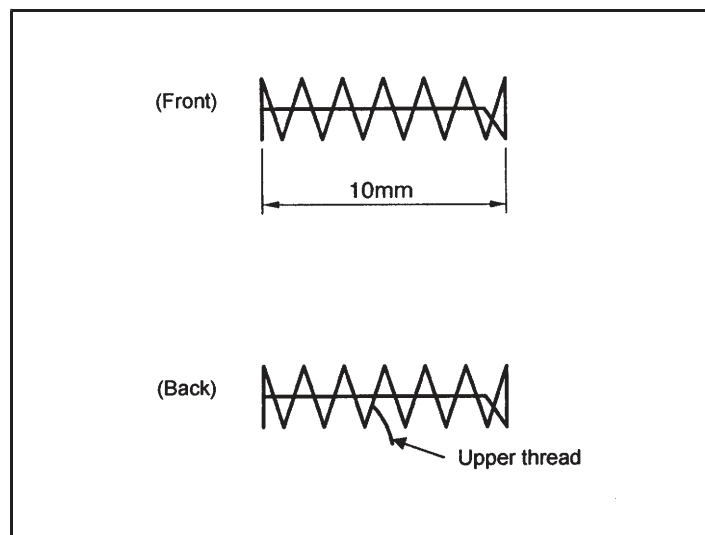
2. If the upper thread trailing length is 40 mm or more, or if the upper thread tension is weak and the upper thread does not form a good seam at the first stitch, the end of the thread that is being held by the thread nipper may become wound around the seam.

Furthermore, if using thick thread that is #30 or higher or if the thread trailing length is too long, an error [E691] may occur.

In any of these cases, use scissors to cut the thread without pulling it up too hard.



3. For sewing patterns with a short bar tack length (10 mm or less), the end of the thread that is being held by the thread nipper may poke out from the seam on the underside of the material. It is recommended that you change the thread nipper setting to "OFF" for patterns such as these.



4. If error [E690] or [E691] frequently occurs, remove the needle plate and remove any thread scraps from underneath the needle plate.

<Program No. Reference Table>

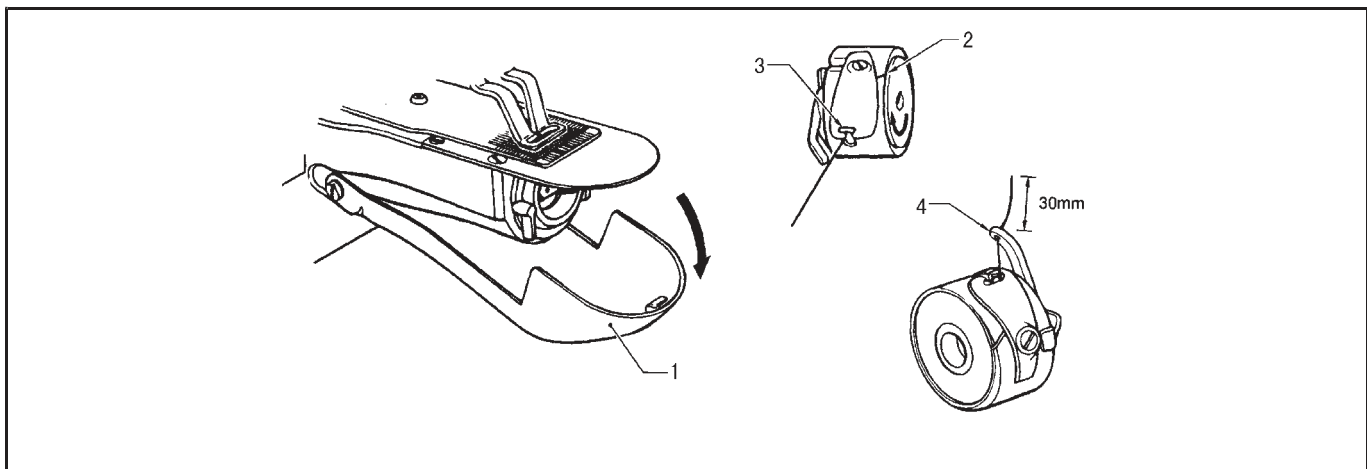
Specifications	Standard program No.	Program No. for thread nipper device
For ordinary materials (-01)	1	65
	4	66
	5	67
	8	68
	13	69
	15	70
	20	71
	21	72
For denim (-02)	2	78
	3	79
	6	80
	14	81
	16	82
	17	83
	18	84
	19	85

4-5. Installing the bobbin case

 CAUTION



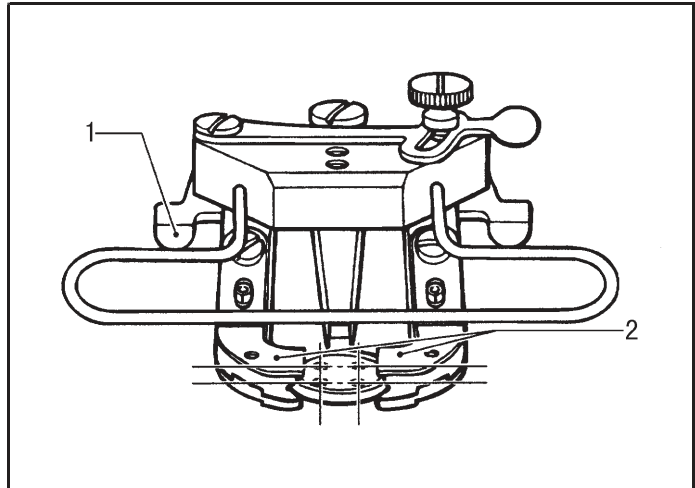
Turn off the power switch before installing the bobbin case, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.



1. Pull the shuttle race cover (1) downward to open it.
2. While holding the bobbin so that the thread winds to the right, insert the bobbin into the bobbin case.
3. Pass the thread through the slot (2) and pull it out from the thread hole (3).
4. Check that the bobbin turns in the direction of the arrow when the thread is pulled.
5. Pass the thread through the lever thread hole (4), and then pull out approximately 30 mm of thread.
6. Hold the latch on the bobbin case and insert the bobbin case into the rotary hook.

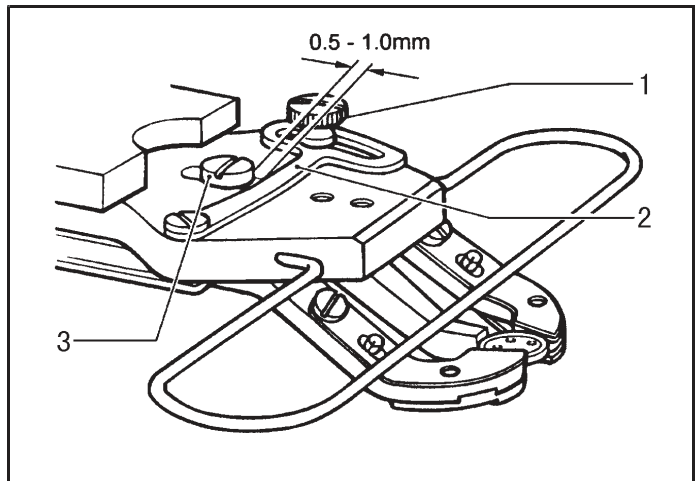
4-6. Inserting the button (GT691D)

1. Press the button clamp plate cam (1) to open the button holder (2).
2. Insert the button, making sure that the button is facing the directing shown in the illustration, then release the button clamp plate cam (1).



4-7. Adjusting the button clamp (GT691D)

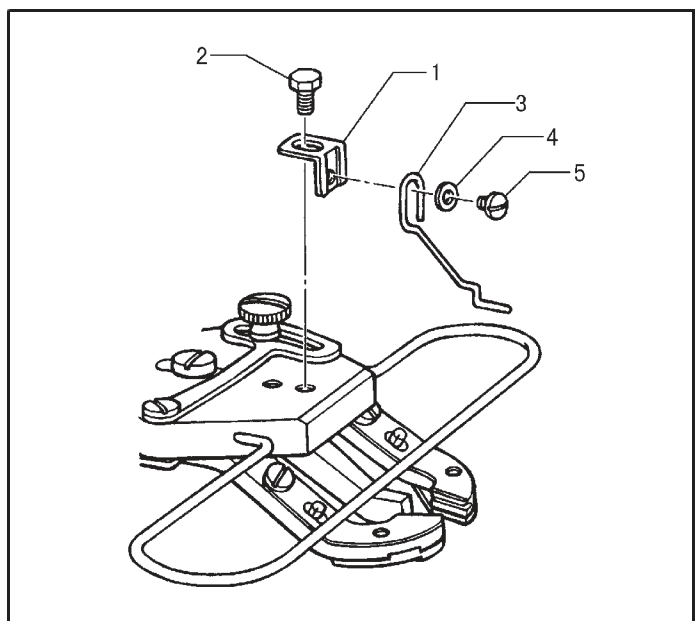
1. Insert the button in the button clamp. Confirm that the button is securely held by the clamp.
2. Loosen the shoulder screw (1), while the button is held by the clamp. Move the adjusting plate (2) so that the space between the adjusting plate (2) and screw (3) is approximately 0.5 – 1.0 mm, then tighten the shoulder screw (1).



4-8. Installing the accessory spring (GT691D)

If you would like the button to be raised up more after it is sewn, install the accessory spring.

1. Install the spring support (1) with the bolt (2).
2. Install the spring (3) with the washer (4) and the screw (5).



5. SEWING



CAUTION



Turn off the power switch at the following times, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

- When threading the needle
- When replacing the needle and bobbin
- When not using the machine and when leaving the machine unattended



Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.

1. Turn on the power switch.
2. Press the Δ or ∇ key (1) to select the number for the program to be sewn.

3. Depress the foot switch to the 2nd step.
The feed mechanism will move to the home position.

4. Set the material under the work clamp (2).
(For the 691D, insert the button and place the material under the button clamp (3). (Refer to "4-7. Inserting the button".)

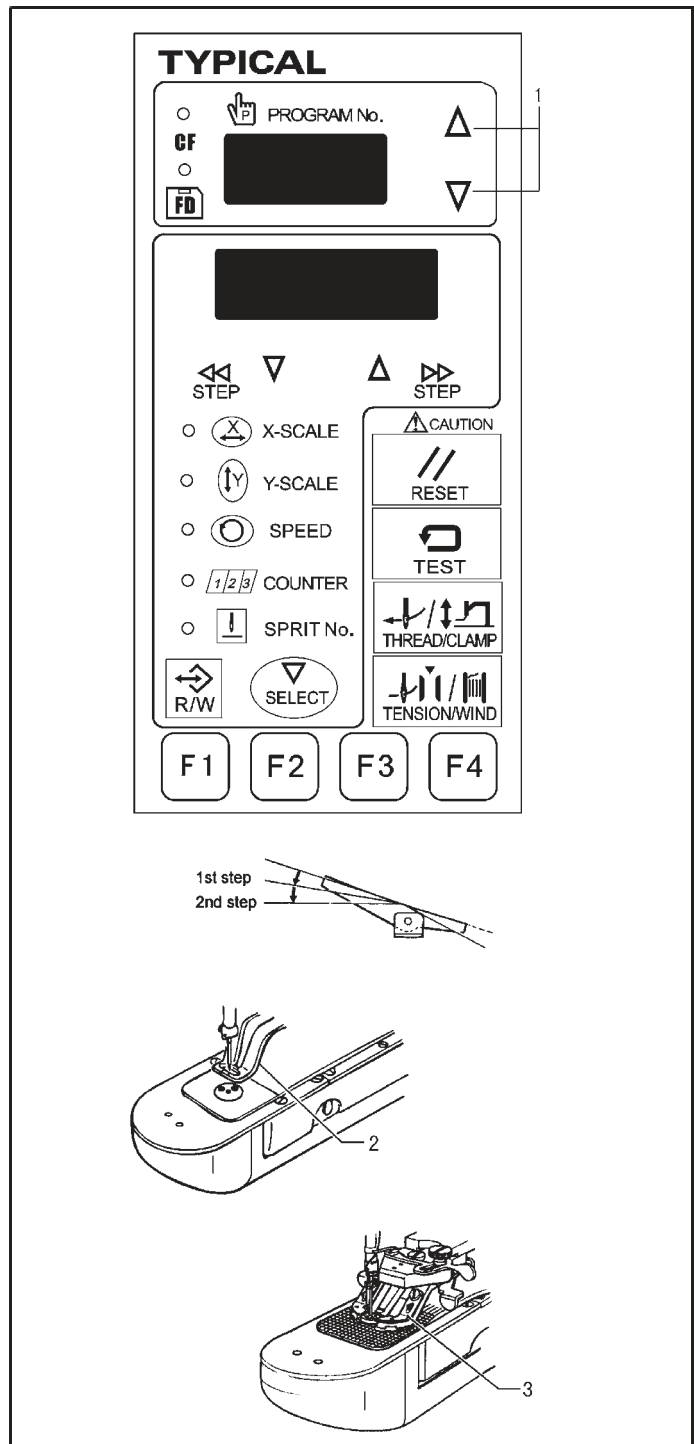
5. Depress the foot switch to the 1st step.
The work clamp (2) / button clamp (3) will be lowered.

6. Depress the foot switch to the 2nd step. The sewing machine will start sewing.

* If memory switch no. 003 is set to "ON", the work clamp (2)/button clamp (3) will drop to the intermediate stop position when the foot switch is depressed to the 1st step, and when it is depressed to the 2nd step, the material will be held and sewing will start.

7. Once sewing is completed and the thread has been trimmed, the work clamp (2) / button clamp (3) will rise.

- Refer to manual of electric-controller.

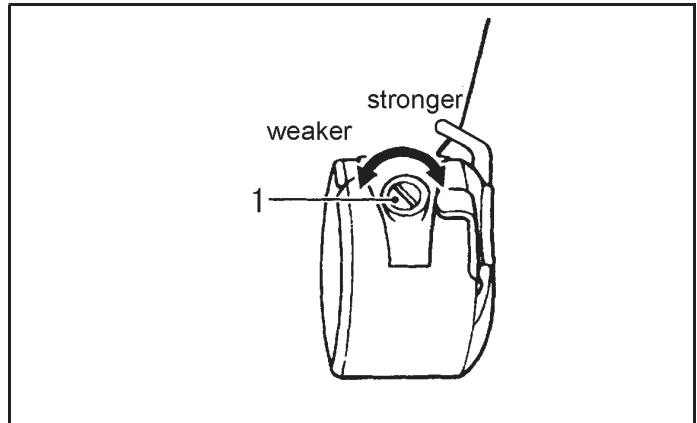


6.ADJUSTING

6-1 Thread tension

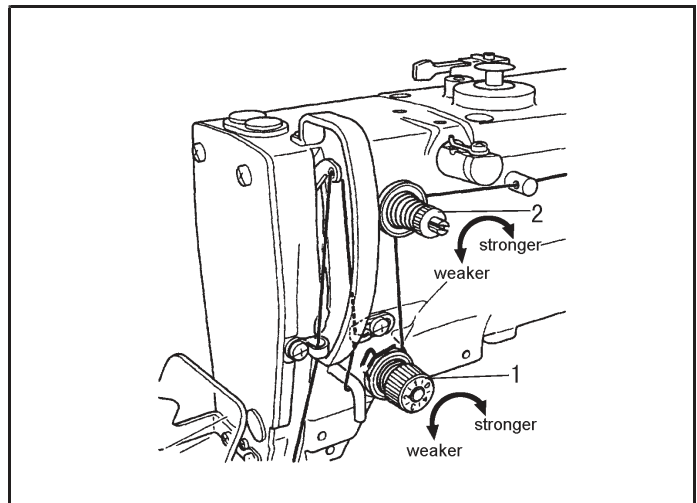
6-1-1 Lower thread tension

Adjust the thread tension to the weakest possible tension by turning the thread tension nut (1) until the bobbin case will not drop by its own weight while the thread end coming out of the bobbin case is held.



6-1-2. Upper thread tension

Turn the tension nut (1)(main tension) to adjust the tension as appropriate for the material being sewn. Furthermore, turn the tension nut (2) (sub-tension) to adjust the remaining length of upper thread to 35 – 40 mm, when the thread take-up lever is not used.



Reference thread tension

Use	GT690D		GT691D
	Ordinary materials (-01)	Denim (-02)	
Upper thread	#50 or equivalent	#30 or equivalent	#60 or equivalent
Lower thread	#60 or equivalent	#50 or equivalent	#60 or equivalent
Upper thread tension (N)	0.8-1.2	1.6-2.0	1.0-1.8
Lower thread tension (N)	0.2-0.3		0.2-0.4
Pre-tension (N)	0.05-0.3		0.1-0.4
Needle	DPx5 #14	DPx17 #19	DPx17 #12

Note: The thread may break due to heat under some sewing conditions. If this happens, reduce the sewing speed, or use the liquid cooling tank.

7. MAINTENANCE



CAUTION



Turn off the power switch before carrying out cleaning, otherwise the machine may operate if the foot switch is pressed by mistake, which could result in injury.

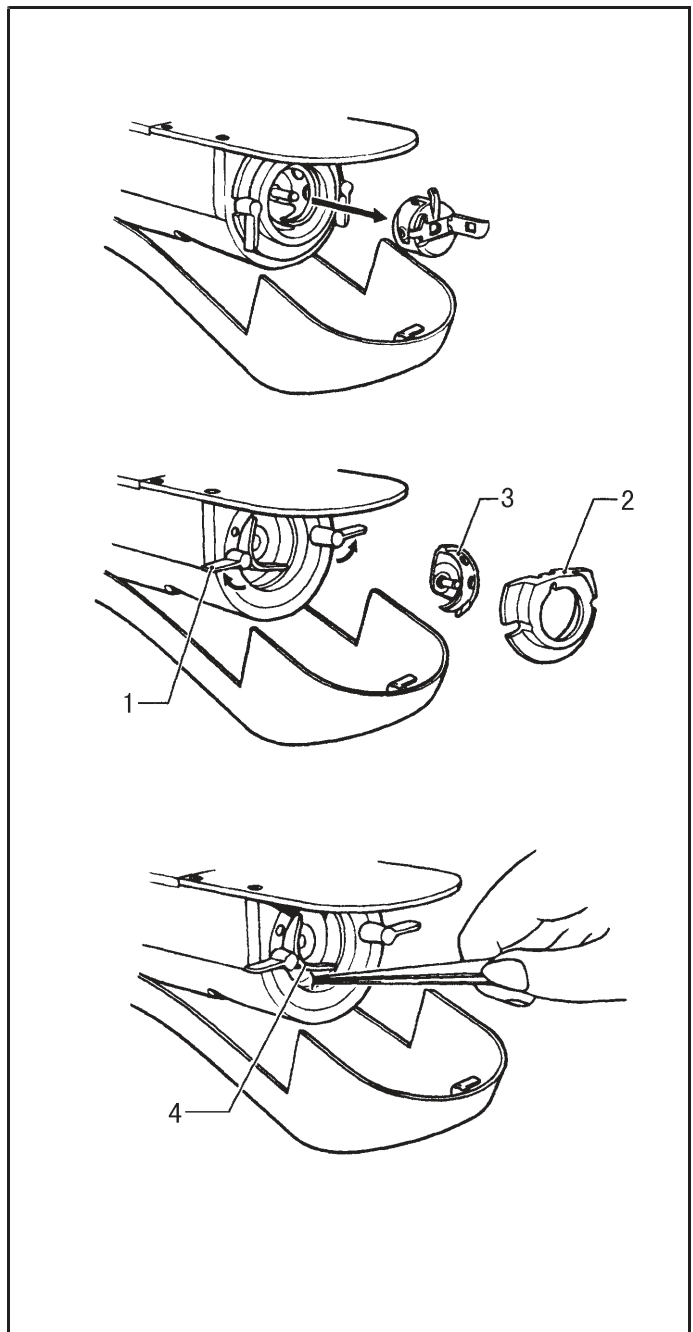


Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.

Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.

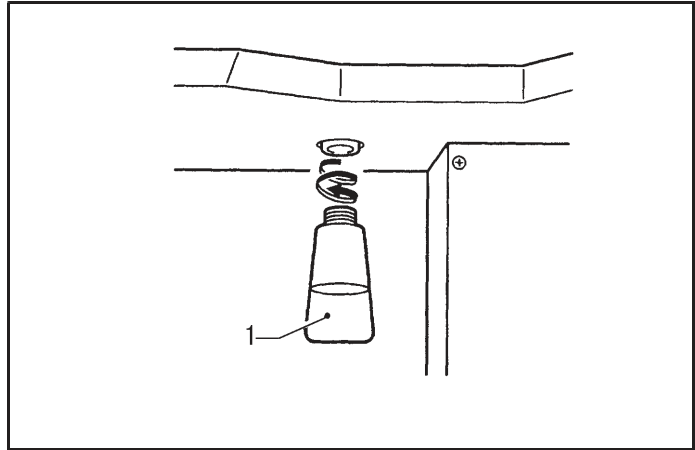
7-1. Cleaning the rotary hook

1. Pull the shuttle race cover downward to open it, and then remove the bobbin case.
2. Open the setting claw (1) in the direction indicated by the arrow, and then remove the shuttle race base (2) and the shuttle hook (3).
3. Clean all the dust and thread ends from around the driver (4), the top of the rotary hook thread guide and the shuttle race.



7-2. Draining the oil

1. Remove and empty the waste oil container (1) whenever it is full.
2. After emptying the waste oil container (1), screw it back into its original position.

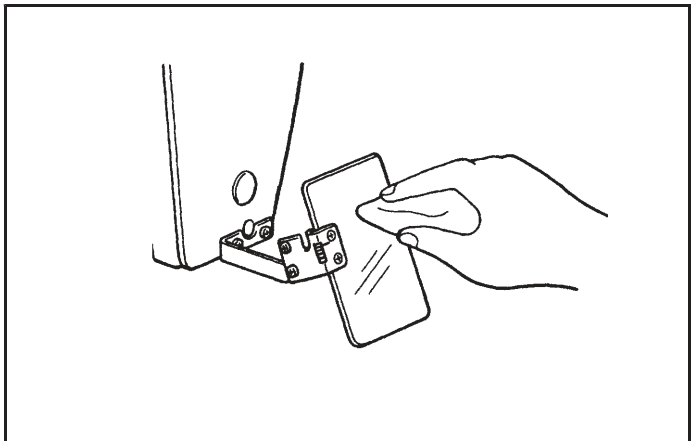


7-3. Cleaning the eye guard

Wipe the eye guard clean with a soft cloth.

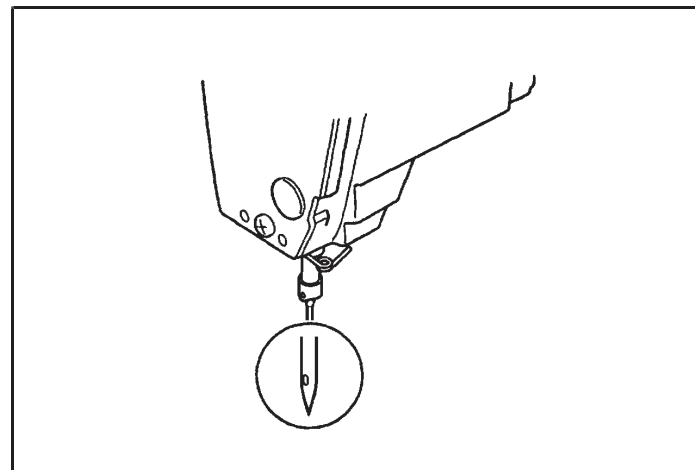
Note:

Do not use solvents such as kerosene or thinner to clean the eye guard.



7-4. Checking the needle

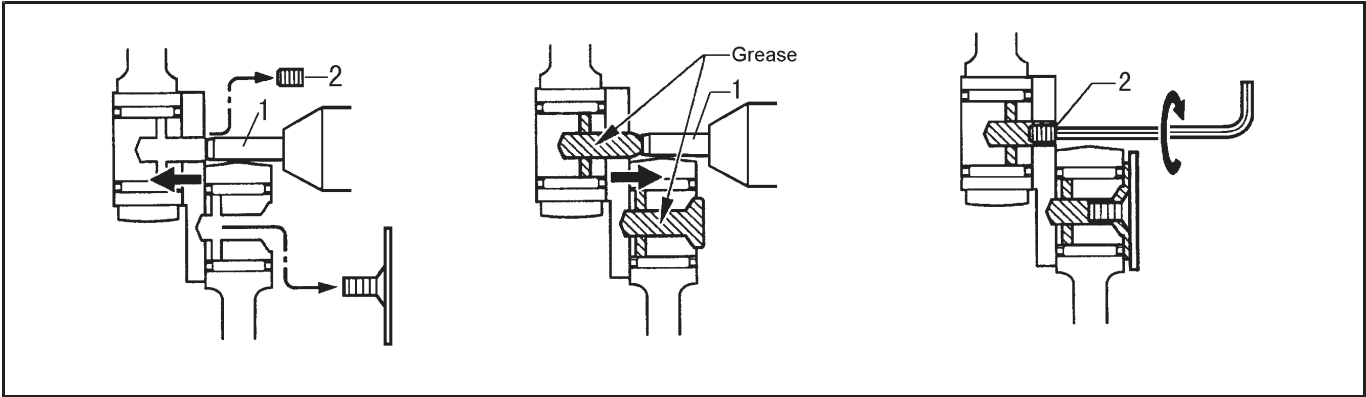
Always check that the tip of the needle is not broken and also the needle is not bent before starting sewing.



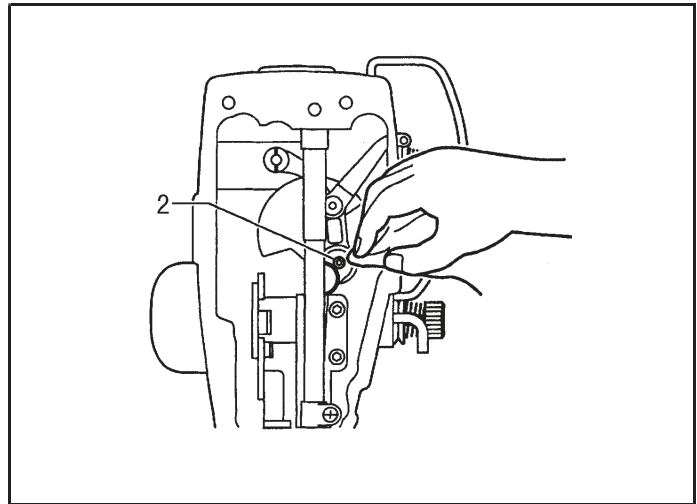
7-5. Lubrication

Carry out the lubrication referring to "3-12 lubrication"

7-6. Applying grease



1. Turn off the power switch.
2. Remove the screw (2). (Refer to the separate page for greasing locations.)
3. While turning the machine pulley by hand to move the needle bar up and down, apply grease to each hole until the grease overflows slightly.
4. Tighten the screw (2) to push in the grease.
5. Turn the machine pulley by hand to move the needle bar up and down several times in order to disperse the grease.
6. Use a cloth to wipe away any excess grease from around the screw (2).



Note:

● Once the grease tube has been opened, remove the nozzle from the tube, attach the cap securely and store the tube in a cool dark place.

● The grease should be used as quickly as possible.

● When using the grease again, remove any old grease from inside the nozzle first

(Store the tube away carefully once the tube has been opened, otherwise the grease remaining inside the tube may deteriorate, and this may affect its lubricating performance.)

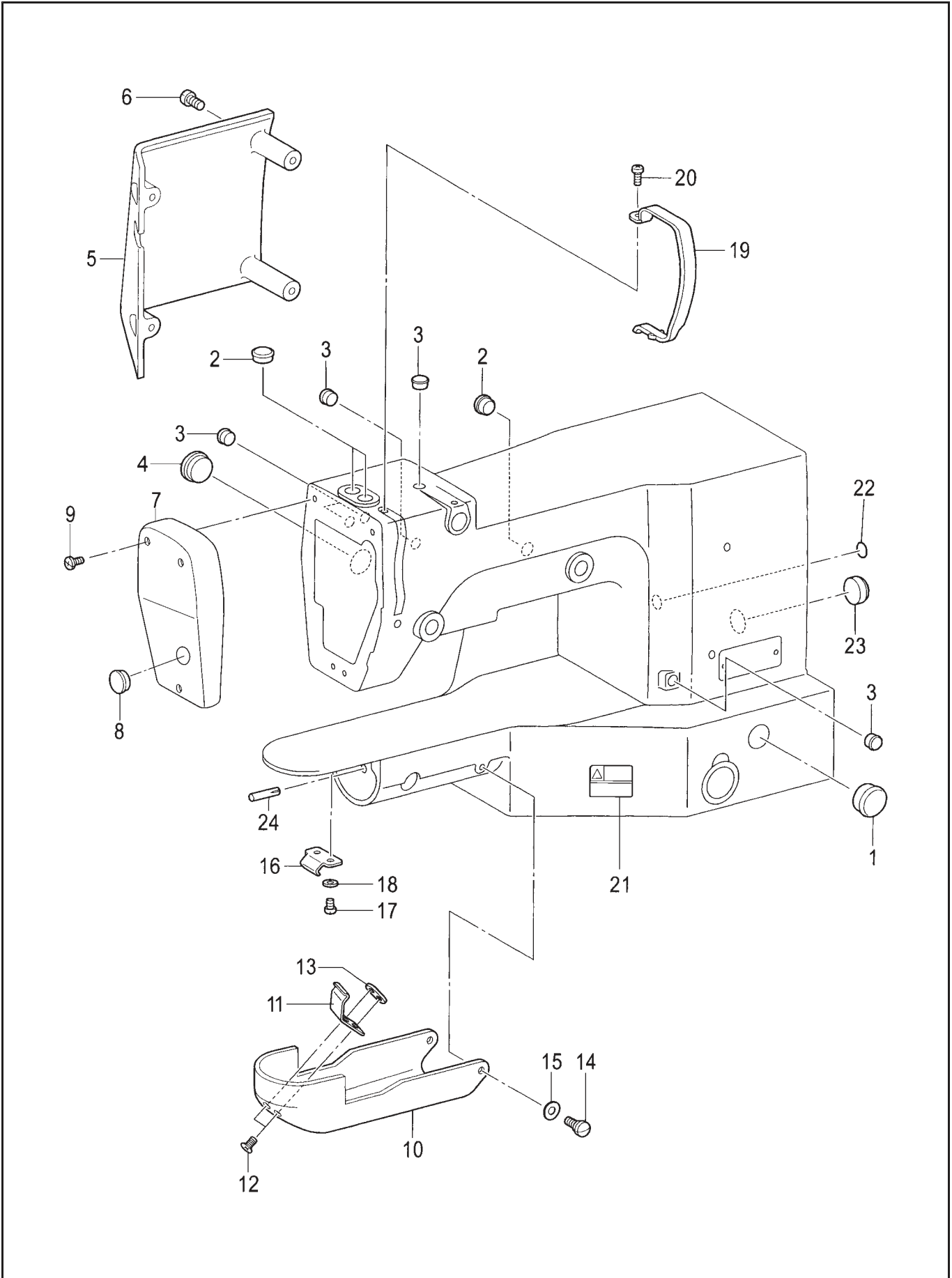
Trouble shooting

Trouble	Cause	Check point	Remedy
Thread breaks	<p>Surface thread tension is too strong</p> <p>needle is not properly installed</p> <p>Thread is too big thick for the needle</p> <p>Bottom thread tension is too strong</p>	<p>Surface thread tension</p> <p>Needle direction</p> <p>Needle and Thread</p> <p>Bottom thread tension</p>	<p>Adjust the tension</p> <p>Needle slot face the front</p> <p>Choose the needle and thread</p> <p>Adjust the tension</p>
Thread slips out of needle at first stitch	<p>Space between needle and hook is too big</p> <p>Needle enter too much into the hook</p> <p>Needle bent</p> <p>Needle installed incorrectly</p>	<p>Space between needle and hook</p> <p>Space between needle and hook</p> <p>Needle bent</p> <p>Needle direction</p>	<p>Adjust the Space between needle and hook</p> <p>Adjust the Space between needle and hook</p> <p>Choose the needle and thread and change the needle</p> <p>Needle slot face the front</p>
Needle breaks	<p>Needle touch the hook</p> <p>Needle bent</p> <p>Wrong sewing</p> <p>Swing hook too high</p>	<p>Space between needle and hook</p> <p>Needle bent</p> <p>needle and fabric not in synchronization</p> <p>Height of the Swing hook</p>	<p>Adjust the Space between needle and hook</p> <p>Choose the needle and thread and change the needle</p> <p>Adjust the needle and fabric in synchronization</p> <p>Adjust the Height of the Swing hook</p>

Trouble shooting

Trouble	Cause	Check point	Remedy
Thread not trimmed	<p>fixed knife blunt thread cutting spring loose, moving knife cannot move in place moving knife cannot turn Surface thread Last stitch skip, moving knife cannot turn Surface thread moving knife wrong position</p>	<p>Fix knife blade thread cutting spring tension hook guide line position skip last stitch moving knife position</p>	<p>changing the moving knife changing the thread cutting spring put the hook guide line in same line with the hook Turn to the skip stitch adjust the moving knife position</p>
Thread ensnared	<p>picking spring too loose hook guide line not spread the thread</p>	<p>picking spring tension hook guide line position</p>	<p>adjust the picking spring tension and height put the hook guide line in same line with the hook</p>
Thread tension poor	<p>Surface thread tension too weak Bottom thread tension too weak</p>	<p>Surface thread tension Bottom thread tension</p>	<p>adjust the tension adjust the tension</p>
Preeser foot does not rise	<p>Footlifter motor problem Footlifter cam not Synchronization</p>	<p>Motor gear Footlifter cam Synchronization position</p>	<p>change motor Adjust Footlifter cam Synchronization position</p>

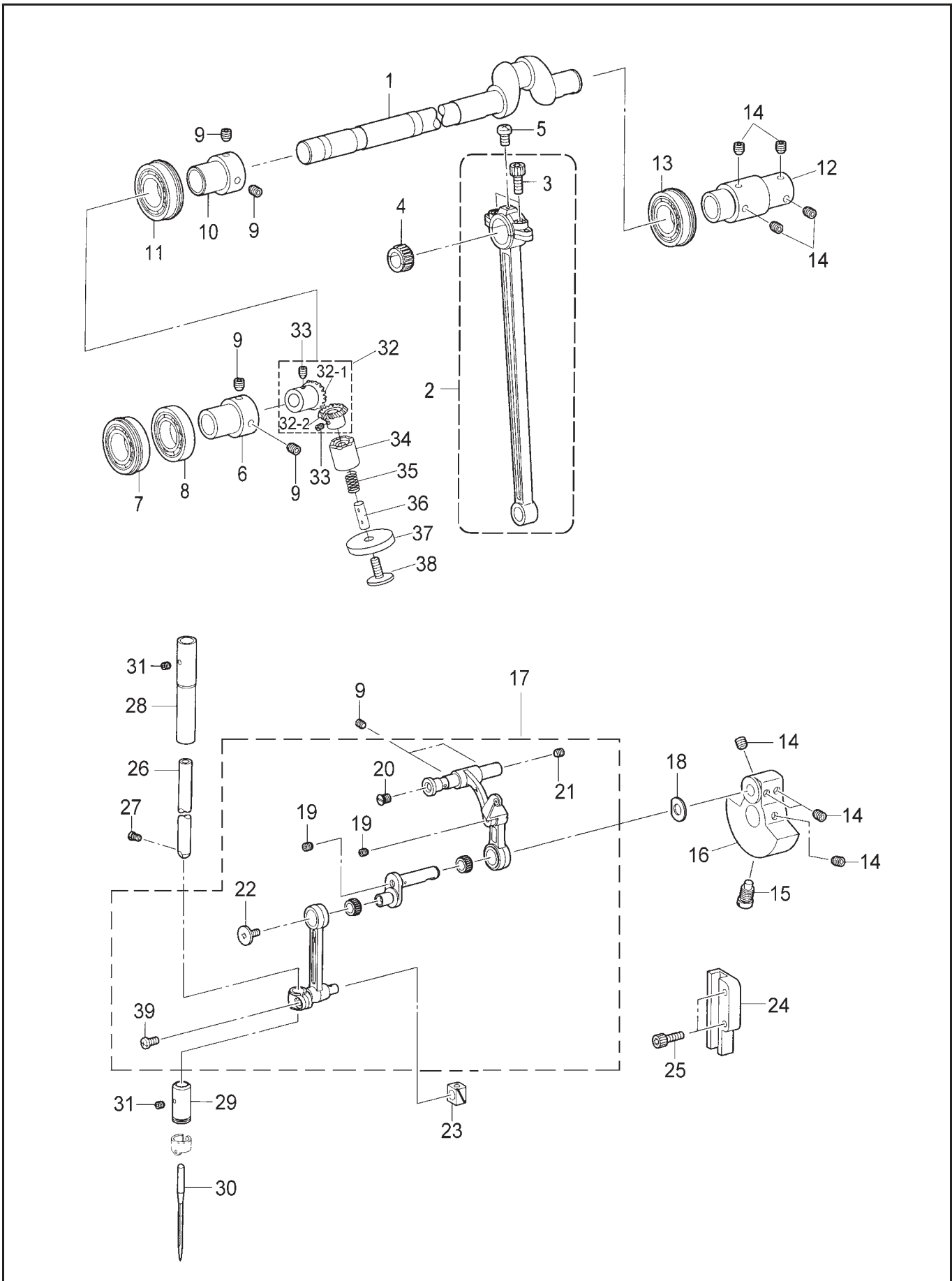
A. Machine body



A. Machine body

No.	Ref.No.	Description	Qt.	Note
1	B960718001	Oil cap	1	
2	B993176009	Rubber cap 13.5	3	
3	B906289009	Rubber cap 10.5	5	
4	B960718001	Oil cap	1	
5	213000004	Frame side cover	1	
6	B048049094	Screw M6X10	4	
7	213000003	Face plate	1	
8	B906661009	Rubber cap 15.5	1	
9	B048509094	Screw M5X10	3	
10	BXF6646009	Shuttle race cover	1	
11	BXF7847009	Shuttle race cover hook D	1	
12	B006700597	Screw M3X5	2	
13	BXF7846009	Nut plate	1	
14	BXF7845009	Shoulder screw 8-2	2	
15	B901871008	Washer	2	
16	BXF7844009	Shuttle race cover hook U	1	
17	B048700694	Screw M3X4	2	
18	B085070874	Washer M3	2	
19	BXF7800909	Thread take-up cover	1	
20	B048609004	Screw M4X10	1	
21	BX72761009	Label	1	
22	BX73040009	Label,Grounding	1	
23	BX82066009	Rubber cap 20.8	1	
24	S150435018	Pin B4x20	1	

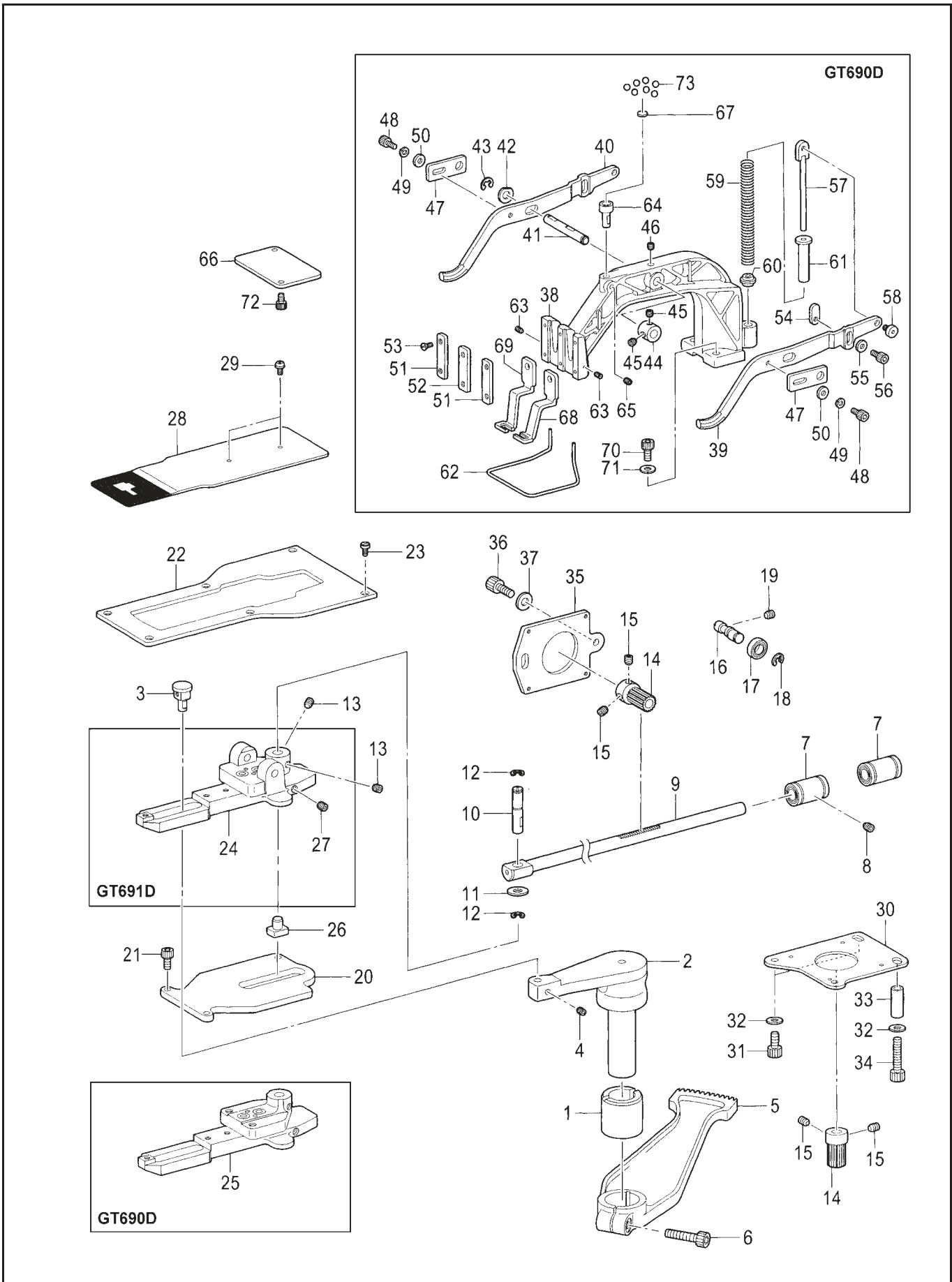
B. Upper shaft and needle bar mechanism



B. Upper shaft and needle bar mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7809009	Upper shaft	1	
2	BXF7611009	Connecting assy	1	
3	B092509474	Bolt, Socket M5 × 16	2	
4	BXF7843009	Needle bearing H	2	Optiona
4	BXF7818009	Needle bearing H	2	Optiona
4	BXF7650009	Needle bearing H	2	Optiona
4	BXF7626009	Needle bearing H	2	Optiona
5	B048700694	Screw M3X4	1	
6	BXF7804009	Ball bearing bush	1	
7	BXF6931009	Ball bearing, 6904ZZNR	1	
8	BXF6920009	Ball bearing R-6904ZZ	1	
9	B098040474	Set screw M6X6	6	
10	BXF7804009	Ball bearing bush	1	
11	S150866037	Ball bearing 6004ZZNR	1	
12	213101001	Coupling	1	
13	S150866006	Ball bearing 6204ZZNR	1	
14	BX87459009	Set screw M6X6	8	
15	BX85875009	Screw M8	1	
16	BXF7613009	Thread take-up crank, C	1	
17	213102000	Thread take-up lever, a set	1	
18	B990743009	Washer 8	1	
19	B098700774	Set screw M3x3	2	
20	BXF8152009	Screw M5x6	1	
21	B098500574	Set screw M5x5	1	
22	B965465009	Screw SM3.57-40 × 6L	1	
23	BXF7622009	Slide block	1	
24	BXF7582009	Slide block guide	1	
25	B092609474	Bolt, Socket M4X16	2	
26	BXF7888009	Needle bar	1	
27	B966652009	Screw SM3.57-40X4.5	1	
28	BXF7887009	Needle bar bush, U	1	
29	BXF7886009	Needle bar bush, D	1	
30	※	Needle	1	
31	B098500574	Bolt, Socket M5X5	2	
32	B929018009	Bevel gear assy	1	
32-1	B994336009	Upper shaft Bevel gear	1	
32-2	B994111009	Vertical shaft Bevel gear U	1	
33	B096330488	Screw SM6.35	4	
34	213100006	Hand wheel bush	1	
35	B958232009	Spring	1	
36	213000011	Hand wheel shaft	1	
37	T2D280203	Hand wheel	1	
38	213000012	Screw M4X8	1	

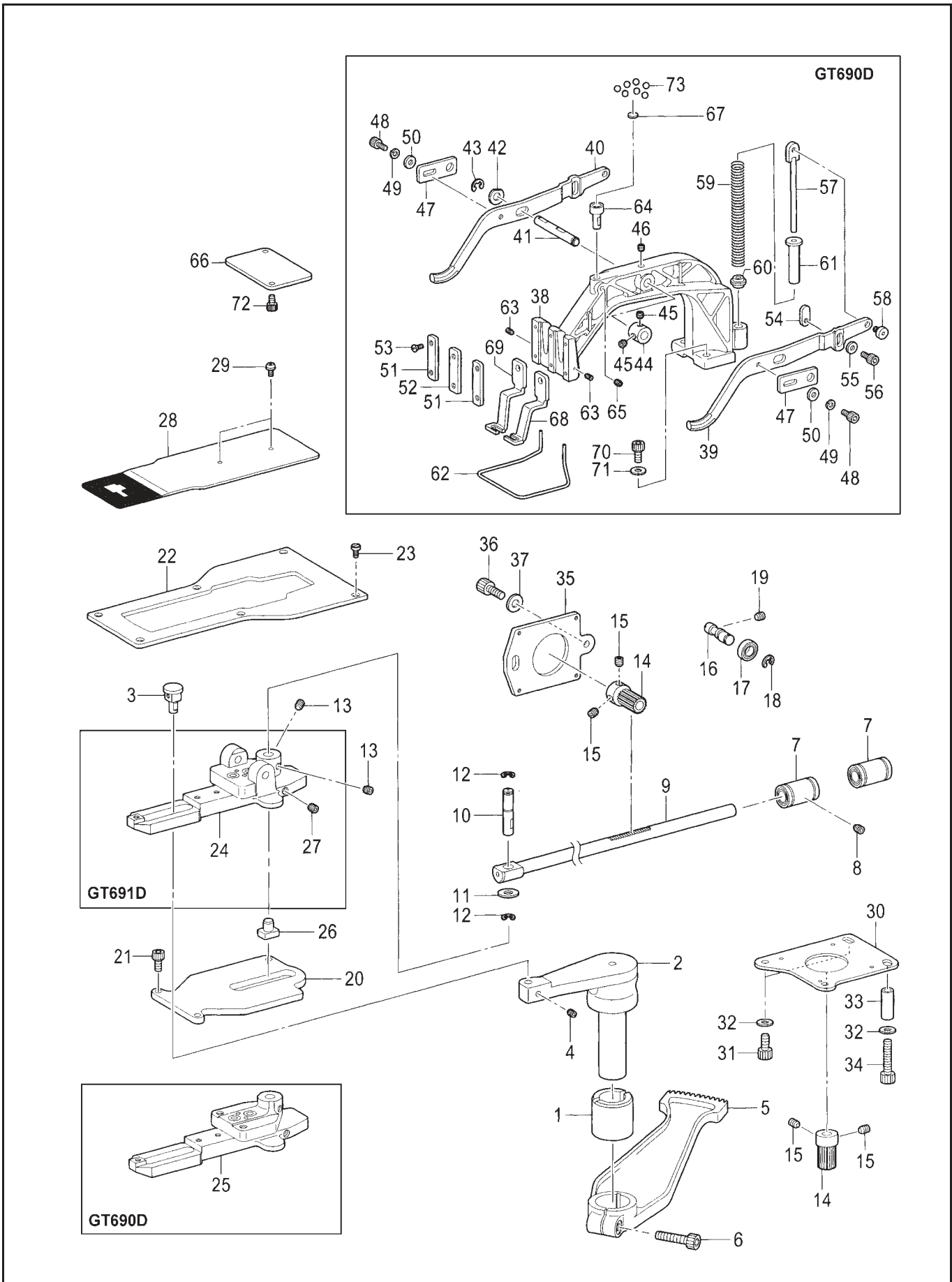
C. Feed mechanism



C. Feed mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7747009	X-Feed lever bush	1	
2	BXF7746009	X-Feed lever	1	
3	BXF7577009	X-Length regulator block assy	1	
4	B098500574	Set screw M5x5	1	
5	BXF7744009	X-Feed gear	1	
6	B092047074	Bolt,Socket M6X30	1	
7	BXH5320009	Bearing10,Liner	2	
8	B098040474	Set screw M6X6	2	
9	BXF7743009	Y-Feed rack shaft	1	
10	BXF7742009	Y-Connecting pin	1	
11	B957997009	Thrust washer	1	
12	B062040768	Retaining ring E6	2	
13	B098040474	Set screw M6X6	2	
14	BXF6913009	Feed gear	2	
15	B098040474	Set screw M6X6	4	
16	BXF7730009	Eccentric shaft	1	
17	B030402200	Ball bearing , Ardial 608ZZ	1	
18	B062020968	Retaining ring ,External C8	1	
19	B098040474	Set screw M6X6	1	
20	BXF7739009	Feed bar support plate	1	
21	B092609074	Bolt,Socket M4X10	3	
22	BXF7738009	Feed bar cover	1	
23	BXF7572009	Screw M4X8	6	
24	BXF7406009	Feed bar sub	1	GT691D
25	BXF7737009	Feed bar sub	1	GT690D
26	BXF7576009	Y-Width regulator block assy	1	
27	B098040474	Set screw M6X6	1	
28	※	Feed plate	1	
29	B957053909	Screw SM4.37	2	
30	BXF7729009	X-Motor setting plate	1	
31	B092049874	Bolt,Socket M6X12	2	
32	B085040874	Washer M6	3	
33	BXF7302009	Collar	1	
34	B092047574	Bolt, Socket M6X35	1	
35	BXF7728009	Y-Motor setting plate	1	
36	B092049874	Bolt, socet M6X12	2	
37	B085040874	Washer M6	2	

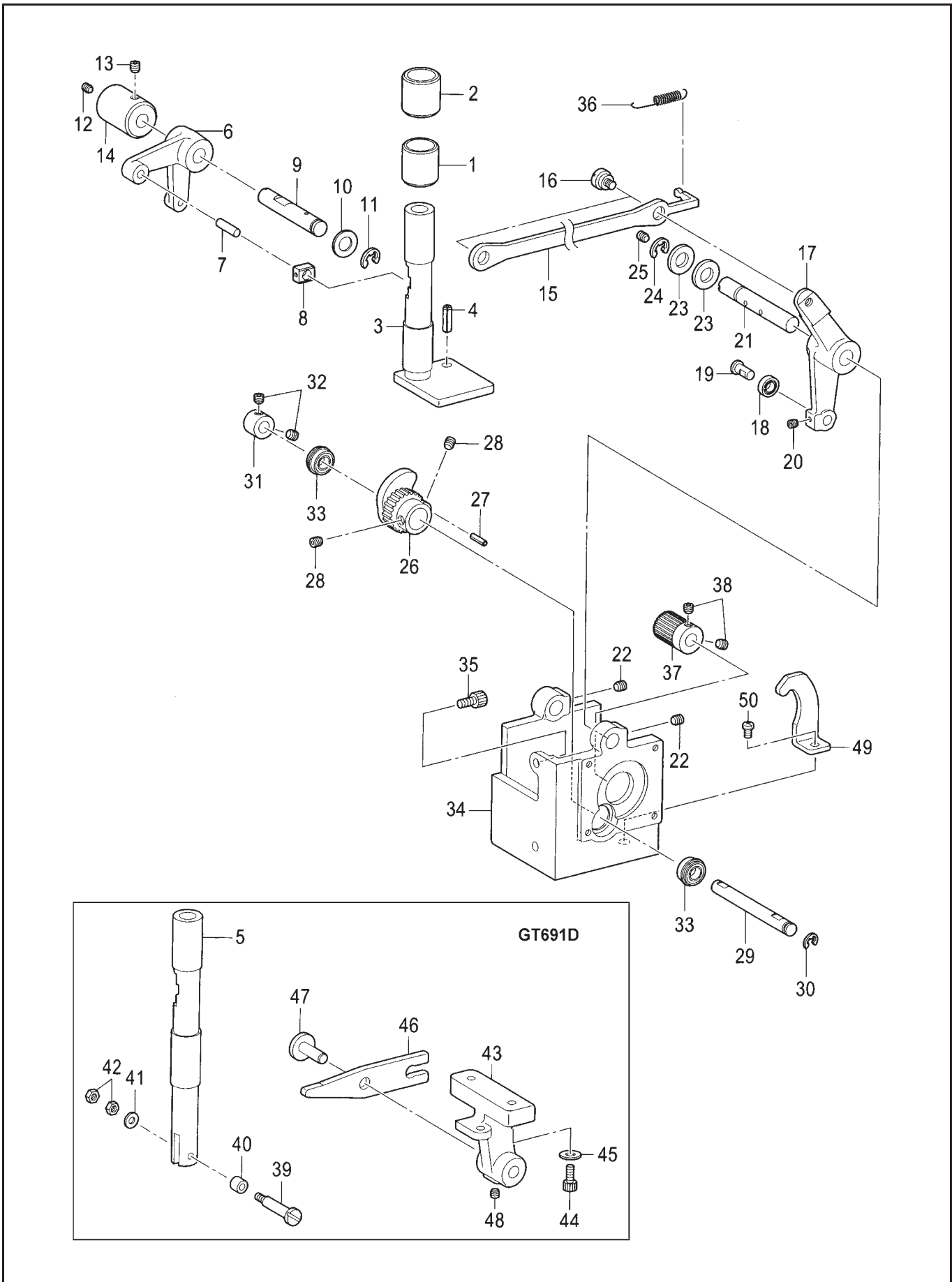
C. Feed mechanism



C. Feed mechanism

No.	Ref.No.	Description	Qt.	Note
38	BXF7691009	Work clamp arm	1	GT690D
39	BXF7680009	Work clamp arm lever R	1	GT690D
40	BXF7689009	Work clamp arm lever L	1	GT690D
41	BXF7688009	Work clamp arm lever shaft	1	GT690D
42	B990743009	Washer 8	1	GT690D
43	B062040764	Retaining ring E6	1	GT690D
44	BXF7879009	Set screw collar	1	GT690D
45	B098040574	Set screw M6X5	2	GT690D
46	B098500574	Set screw	1	GT690D
47	BXF7687009	Work clamp lever support	2	GT690D
48	B092500274	Bolt,Socket M5X8	2	GT690D
49	B082050864	Washer, Spring 2-5	2	GT690D
50	B085050876	Washer M5	2	GT690D
51	BXF7686009	Work clamp guide bracket,A	2	GT690D
52	BXF7685009	Work clamp guide bracket,B	1	GT690D
53	BXF7684009	Screw M3.5	6	GT690D
54	BXF7802009	Work clamp arm lever plate	2	GT690D
55	B964756008	Washer 5	2	GT690D
56	B092500274	Bolt, Socket M5X8	2	GT690D
57	BXF7683009	Spring guide rod	2	GT690D
58	BXF9931008	Shoulder screw M5	2	GT690D
59	B957542009	Presser spring A	2	GT690D
60	B958322000	Presser spring spacer	2	GT690D
61	B957543000	Presser spring collar	2	GT690D
62	BXF6970009	Finger guard	1	GT690D
63	BXF8484009	Set screw M3.5	2	GT690D
64	BXF7682009	Support shaft	1	GT690D
65	B098500574	Set screw M5X5	1	GT690D
66	BXF7623009	Work clamp arm support plate	1	
67	BXF6965009	Spacer	1	GT690D
68	※	Work clamp,right	1	GT690D
69	※	Work clamp left	1	GT690D
70	B092049474	Bolt , socket M6X16	2	GT690D
71	B085040874	Washer M6	2	GT690D
72	B092600274	Bolt, socket M4X8	2	
73	B039079260	Bearing ball 1/8"	7	GT690D

D. Work clamp lifter mechanism



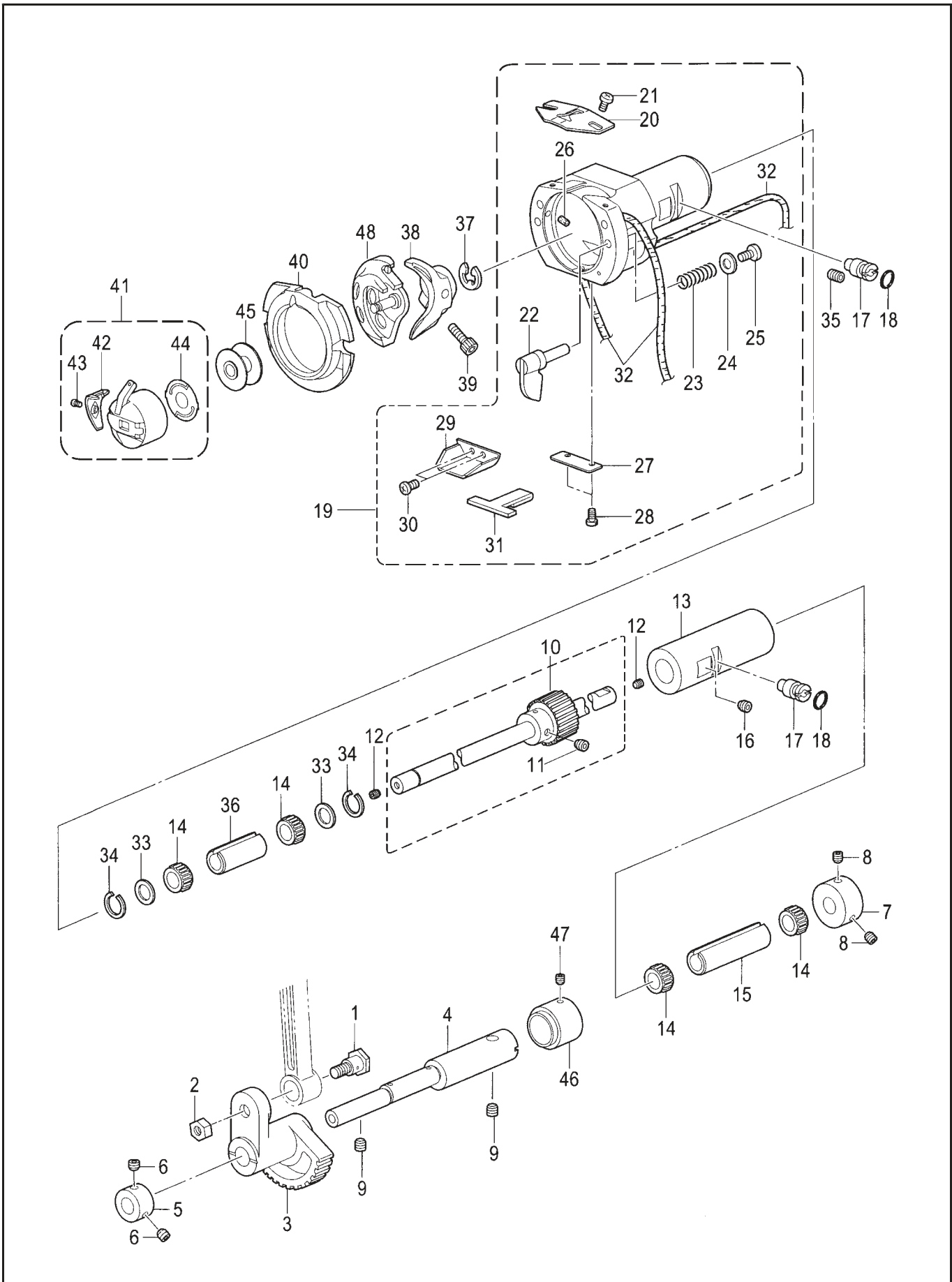
D. Work clamp lifter mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7681009	Footlifter bush D	1	
2	BXF7670009	Footlifter bush U	1	
3	BXF7678009	Work clamp lifter plate	1	GT690D
4	B063408068	Pin, Spring roll 6x25	1	GT690D
5	BXF7482009	Button clamp rod	1	GT691D
6	BXF7676009	Lifter lever	1	
7	B958366009	Pin	1	
8	B908470009	Needle bar guide slide block	1	
9	BXF7675009	Lever shaft	1	
10	BX80754009	Washer 10	1	
11	B062020768	Retaining ring E8	1	
12	B098500574	Set screw M5x5	1	
13	B098040474	Set screw M6X6	1	
14	BXF7674009	W-Clamp lifter lever bush	1	
15	BXF7673009	Link	1	
16	BXF7672009	Link shoulder screw	2	
17	BXF7671009	Drive lever W-Clamp	1	
18	B030414200	Ball bearing R-696ZZ	1	
19	BXF7669009	W-Clamp lifter roller shaft	1	
20	B098500574	Set screw M5x5	1	
21	BXF7668009	Cam lever shaft	1	
22	B098040474	Set screw M6X6	2	
23	BX80754009	Washer 10	2	
24	B062020768	Retaining ring E8	1	
25	B098500574	Set screw M5x5	1	
26	BXF7667009	Cam gear	1	
27	B063709068	Pin, spring 3x10	1	
28	B098040474	Set screw M6X6	2	
29	BXF7666009	Cam shaft	1	
30	B062040768	Retaining ring E6	1	
31	BXF7879009	Set screw collar	1	
32	B098040574	Set screw M6X5	2	
33	B030422250	Ball bearing ,Radial 688ZZNR	2	
34	BXF7665009	Motor bracket	1	
35	B092049874	Bolt,socket M6X12	2	
36	213300001	Spring	1	
37	BXF7303009	Gear 16	1	
38	B098040574	Set screw M6X5	2	
39	BXF7481009	Button clamp roller shaft	1	GT691D
40	B903366009	Roller	1	GT691D
41	B085060874	Washer M4	1	GT691D
42	B089600894	Nut	2	GT691D
43	BXF7470009	Button clamp lever holder	1	GT691D
44	B092049474	Bolt,socket M6X16	2	GT691D
45	B085040874	Washer M6	2	GT691D
46	BXF7479009	Button clamp lever	1	GT691D
47	B957272009	Button clamp lever shaft	1	GT691D
48	B098040474	Set screw M6X6	1	GT691D
49	BXF6038009	Stopper	1	
50	B048049094	Bolt,socket M6X10	1	

E. Button clamp mechanism (GT691D)

No.	Ref.No.	Description	Qt.	Note
1	B957270000	Button clamp holder	1	
2	B957283009	Button clamp holer shaft	1	
3	B096420478	Set screw SM4.37- 40x6	2	
4	B959142009	Button clamp holder hook assy	1	
5	B959141009	B-Clamp holder hook	1	
6	B903366009	Roller	2	
7	B957626009	Washer 4.76	1	
8	B905876007	Nut SM4.37	2	
9	B096340478	Set screw SM5.95-28 x 6	1	
10	B093399698	Bolt SM4.76 x 14	2	
11	B964756009	Washer 5	2	
12	B964116009	Nut SM6.35-40	2	
13	B995962909	Adjusting screw SM6.35-40	1	
14	B995963009	Compression spring	1	
15	BX61112009	Finger guard	1	
16	B099431798	Set screw SM3.57	2	
17	BX51795009	Button clamp assy 2A	1	
18	BX58017009	Button clamp base	1	
19	BX51794009	Button clamp 2AL	1	
20	BX51793009	Button clamp 2AL	1	
21	B995954009	Button clamp guide pin	2	
22	B063850468	Pin, Spring 2.5	2	
23	BX51792009	Button clamp plate spring	1	
24	BX51791009	Button clamp plate spring	1	
25	B048420598	Screw SM4.37-40 x 5	2	
26	B995952009	Shoulder screw SM4.76	2	
27	BX51780009	Button clamp 2AM	1	
28	BX07451009	Button clamp plate cam	1	
29	B048420298	Screw SM4.37-40 x 8	2	
30	BX07642909	Screw SM4.37	1	
31	BX07453009	Nut SM4.37	1	
32	BX51789009	Spring	1	
33	B995946909	Button clamp adjusting plate	1	
34	B995945009	Shoulder screw SM4.37	1	
35	B995944009	Shoulder screw SM4.37	1	
36	BX58038009	Button clamp spacer BL	1	
37	BX58034009	Button clamp spacer BR	1	
38	BX09416009	Screw SM2.38 x 4	2	

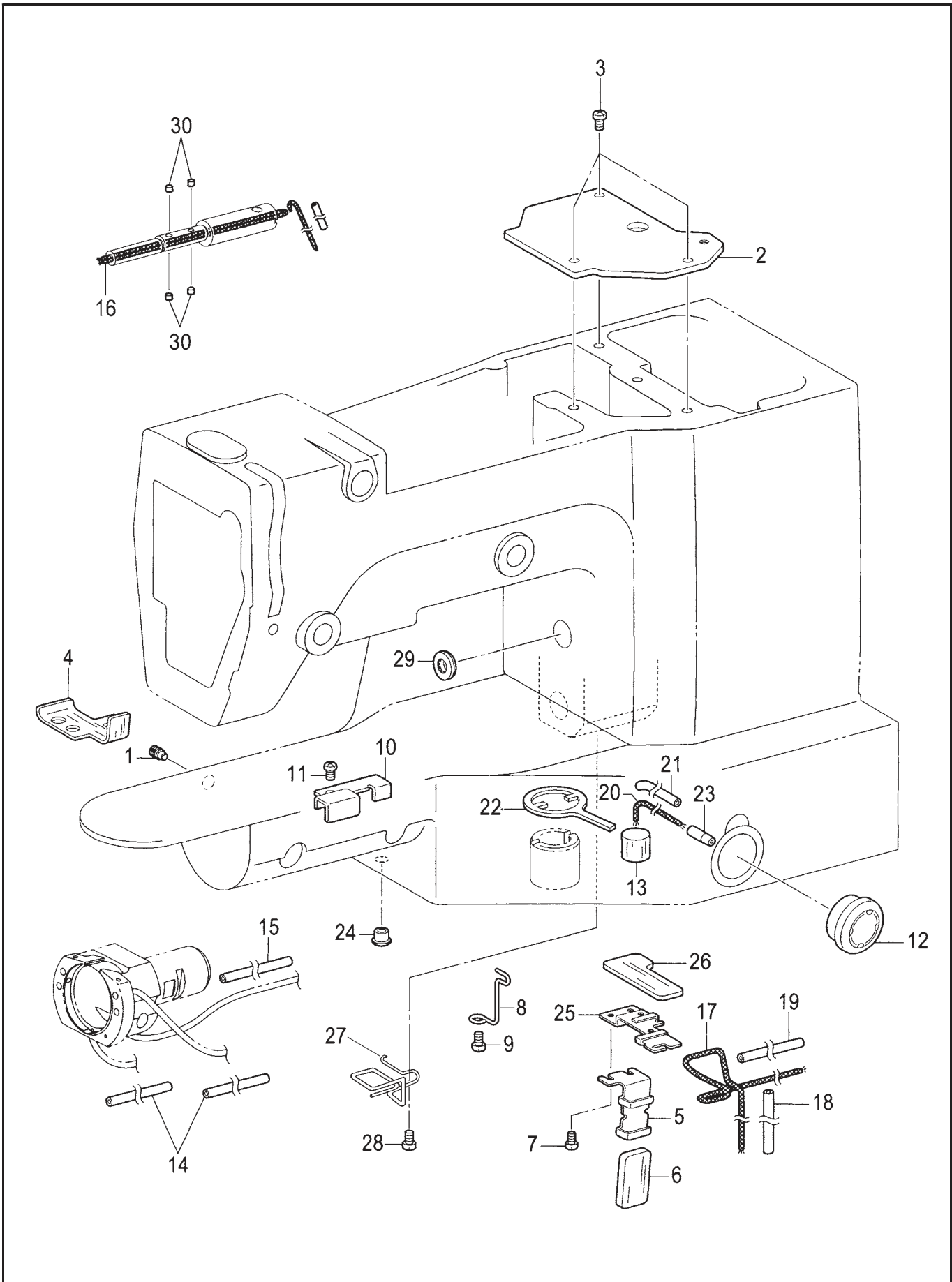
F. Lower shaft mechanism



F. Lower shaft mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7884009	Shoulder screw M6	1	
2	BXF7883009	Nut M6	1	
3	BXF7882009	Rock gear	1	
4	BXF6042909	Rock gear shaft	1	
5	BXF7879009	Set screw collar	1	
6	B098040574	Set screw M6X5	2	
7	BXF7877009	Set screw collar	1	
8	BX87459009	Set screw M6X6	2	
9	B098040474	Set screw M6X6	2	
10	BXF7876009	Lower shaft assy	1	
11	B098500574	Set screw M5X5	1	
12	B098600674	Set screw M4X4	2	
13	BXF7873009	Lower shaft bush	1	Optiona
14	BXF6923009	Needle bearing	4	Optiona
	BXF6922009	Needle bearing	4	Optiona
	BXF6921009	Needle bearing	4	Optiona
	BXF6910009	Needle bearing	4	Optiona
15	BXF7837009	Lower shaft collar	1	
16	B098040474	Set screw M6X6	1	
17	BXF7872909	Pin	2	
18	B029007430	O ring PW3	2	
19	BXF7871009	Shuttle race base assy	1	
20	BX08681809	Shuttle race thread guide	1	
21	S150217009	Screw M3X4	2	
22	BXF7869009	S-Race base setting claw	2	
23	B958426909	Compression spring	2	
24	B084070974	Washer S3	2	
25	B048700494	Screw M3X6	2	
26	B957050000	S-Race base felt	2	
27	BXF7868909	Felt holder	1	
28	S150217009	Screw M3X4	2	
29	BXF7836909	Felt holder	1	
30	S150217009	Screw M3X4	2	
31	BXF7835009	Felt T	1	
32	BX51224009	Oil Thread L=380	3	
33	BXF7834009	Washer	2	
34	213420002	Wire ring 12	2	
35	B098040474	Set screw M6X6	1	
36	BXF7832009	Collar	1	
37	B062030768	Retaining ring E7	1	
38	BXF7826009	Driver	1	
39	B092509878	Bolt,socket M5X12	1	
40	※	Shuttle race base	1	
41	B951490709	Bobbin case assy	1	
42	B956771909	Tension spring	1	
43	B956769009	Screw	1	
44	B951498009	Anti-spin spring	1	
45	B951497059	Bobbin	1	
46	BXF7827009	Set screw collar	1	
47	B098500574	Set screw M5x5	1	
48	※	Shuttle hook	1	

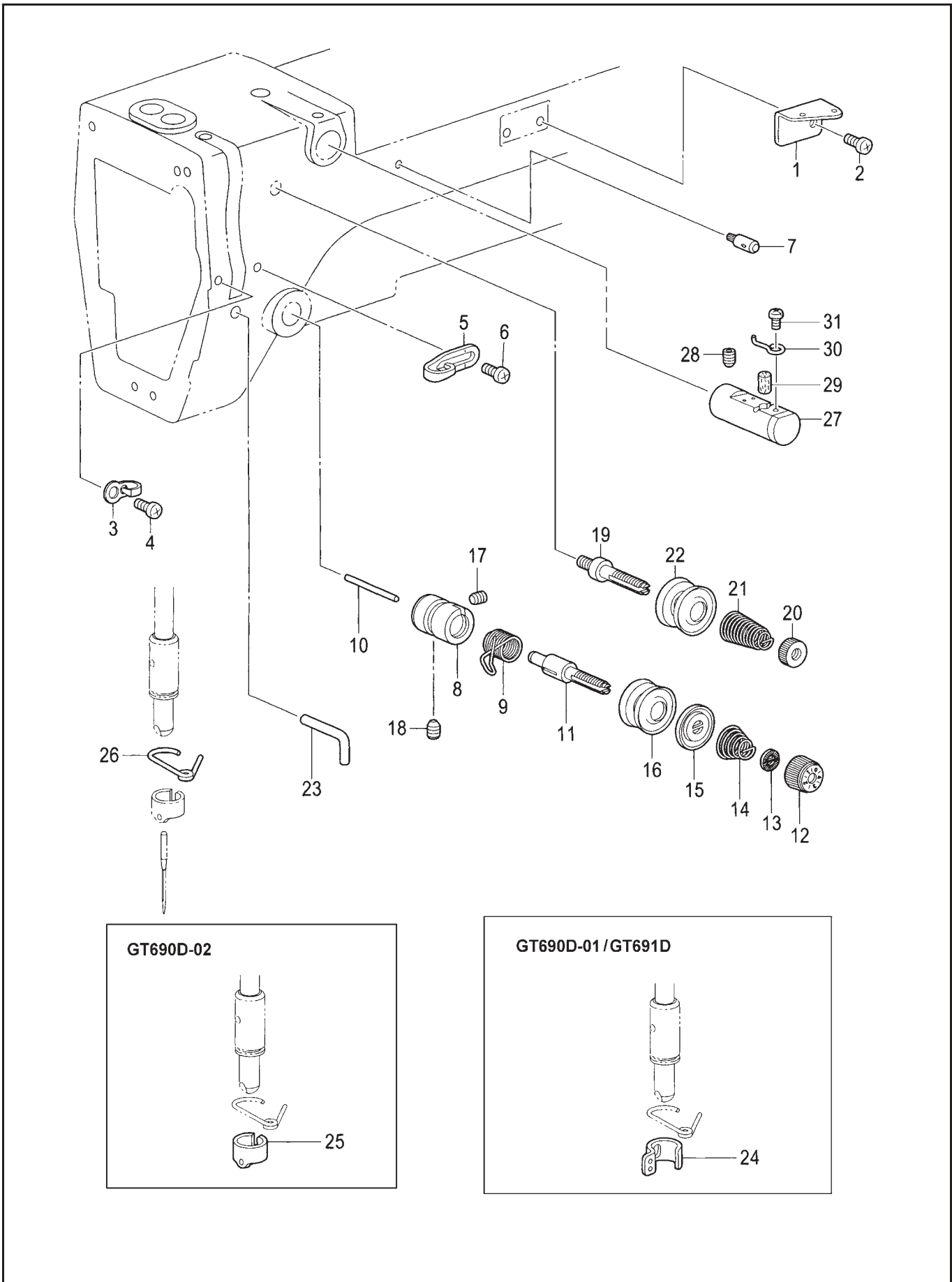
G. Lubrication



G. Lubrication

No.	Ref.No.	Description	Qt.	Note
1	BXF7866009	Set screw	1	
2	BXF7865009	Crank cover	1	
3	B048040294	Screw M6X8	3	
4	BXF7831009	Felt	1	
5	BXF7507809	Lower shaft wick support	1	
6	BXF7506809	Lower shaft gear felt	1	
7	B048600494	Screw M4X6	2	
8	BXF7828009	Cord holder	1	
9	B048040294	Screw M6X8	1	
10	BXF7861009	Oil tube support	1	
11	B048600494	Screw M4X6	1	
12	213501000	Oil gauge window	1	
13	BXF7731009	Felt	1	
14	BX50581000	Oil tube L=300	2	
15	BX82695000	Oil tube L=225	1	
16	BX65261000	Wick 4x4 L=320	1	
17	B957188009	Wick L=510	1	
18	BXF9708009	Oil tube L=120	1	
19	BX54233000	Oil tube L=150	1	
20	BX76098000	Wick 4X4 L=220	1	
21	B967439000	Oil tube L=150	1	
22	BXF7823009	Felt	1	
23	BX03777009	Oil feeding pipe, S	1	
24	B964020000	Cord bush	1	
25	BXF7864009	Gear wick support	1	
26	BXF7820009	Gear felt	1	
27	BXF6648009	Cord holder	1	
28	B048040294	Screw M6X8	1	
29	BXF6888009	Oil cork	1	
30	B957050000	S-race base felt	4	

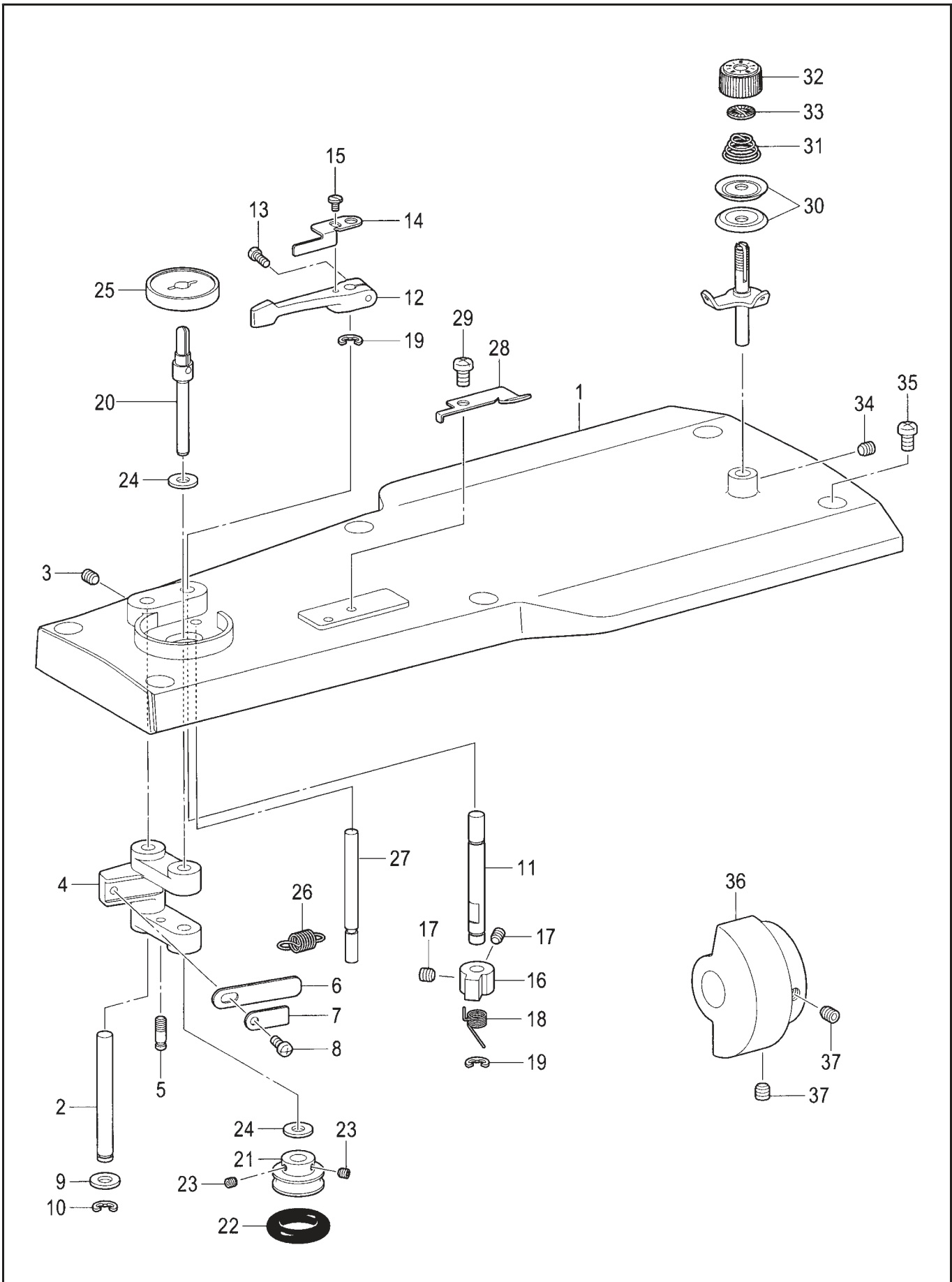
H. Threading mechanism



H. Threading mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7850009	Arm thread guide , A	1	
2	B048500494	Screw M5X6	1	
3	BXF6777009	Arm thread guide , B	1	
4	B048500494	Screw M5X6	1	
5	BXF7858009	Arm thread guide , C	1	
6	B048500494	Screw M5X6	1	
7	B957061009	Upper thread guide stud	1	
8	BXF7856009	Tension bracket	1	
9	※	Thread take-up spring	1	
10	BX98411000	Tension release pin	1	
11	BXF7855009	Tension stud	1	
12	BX79078009	Tension nut	1	
13	BX98669009	Washer	1	
14	※	Tension spring	1	
15	B951205009	Tension disc presser	1	
16	B965664009	Disc ,Tension	2	
17	B900608006	Set screw SM3.57	1	
18	BXF9881909	Set screw M6X6	1	
19	BXF7854009	Tension stud	1	
20	B900974009	Tension nut	1	
21	BXF6964009	Sub tension spring	1	
22	B965664009	Disc ,tension	2	
23	B951886009	Thread guide ,Arm	1	
24	BXF7475009	Needle bar thread guide , B	1	GT690D-01 GT691D
25	BXF7853009	Needle bar thread guide ,A	1	GT690D-02
26	BXF7852009	N-bar bush thread guide	1	
27	B952229009	Needle cooler assy	1	
28	B098040474	Set screw M6X6	1	
29	B958227000	Felt 8X15.5	1	
30	B958226009	Needle cooler thread guide	1	
31	B048430698	Screw SM3.57-40X4	1	

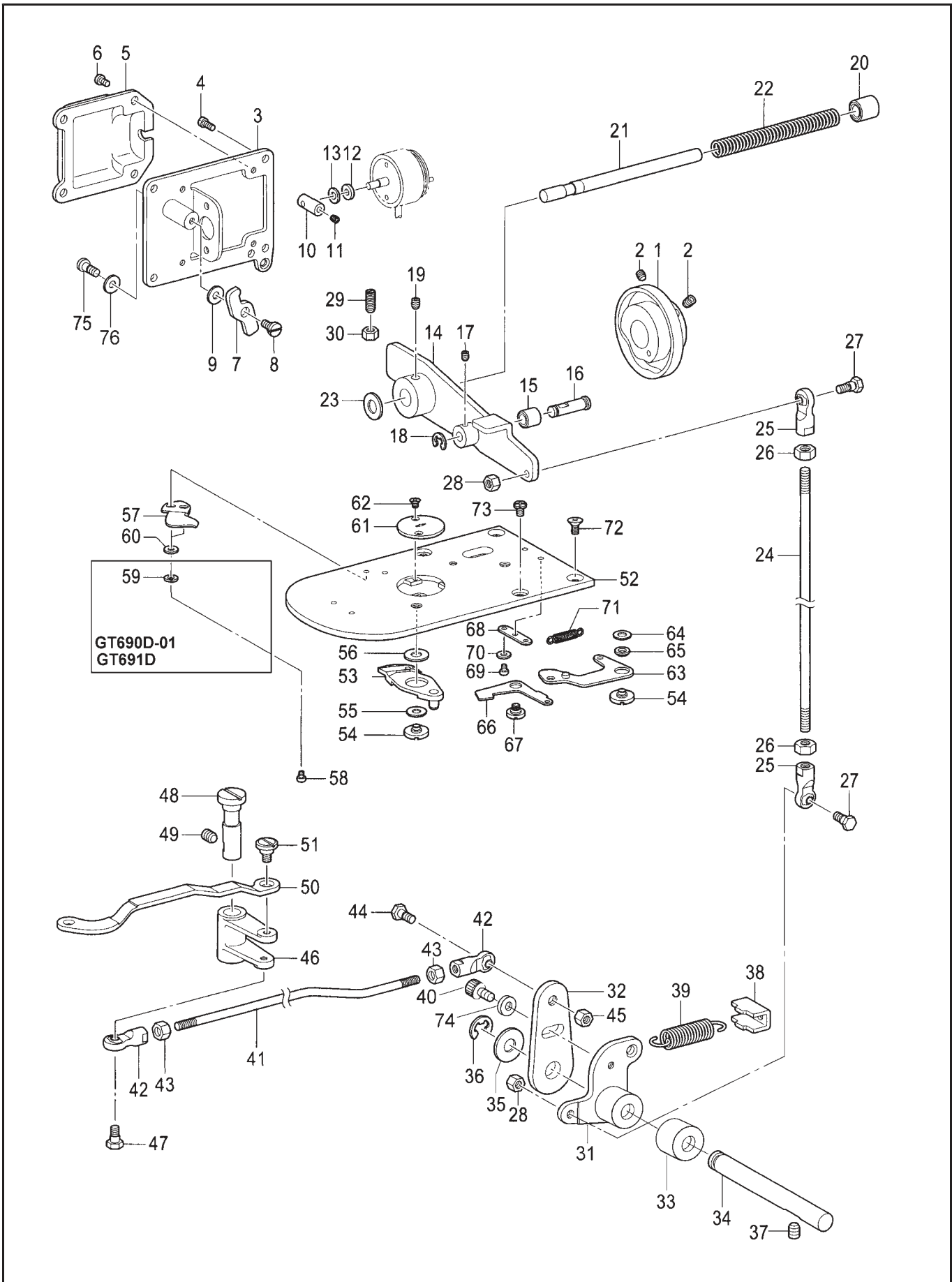
J. Bobbin winder mechanism



J. Bobbin winder mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7821009	Top cover	1	
2	BXF7810009	Shaft ,Bw-lever	1	
3	B098500574	Set screw M5X5	1	
4	BXF7819009	Bobbin winder lever	1	
5	BXF6939009	Spring hook	1	
6	B958174009	Plate spring	1	
7	B958173009	Washer	1	
8	B048750494	Screw M3.5X6	1	
9	B951624009	Washer	1	
10	B062050768	Retaining ring E5	1	
11	BXF7817009	Stud,B-winder claw	1	
12	BXF9126009	Bobbin presser arm	1	
13	B048609894	Screw M4X12	1	
14	BXF7816009	Bobbin presser	1	
15	BX87692008	Screw M4X4.5	1	
16	BXF7815009	Claw,B-winder	1	
17	B098600674	Set screw M4X4	2	
18	BX90672009	Spring	1	
19	B062050768	Retaining ring E5	2	
20	BXF7814009	Bobbin winder shaft	1	
21	BXF7813009	Wheel, B-winder	1	
22	B980662009	Bobbin winder rubber band	1	
23	B098600674	Set screw M4X4	2	
24	B085040974	Washer S6	2	
25	BXF9122009	Bobbin support	1	
26	BX90842009	Spring	1	
27	BXF7812009	Stpper shaft	1	
28	BXF7811009	Knife	1	
29	B048500494	Screw M5X6	1	
30	B965664009	Disc,Tension	2	
31	B900609089	Tension spring	1	
32	BX79078009	Tension nut	1	
33	BX98669009	Washer	1	
34	B098500574	Set screw M5X5	1	
35	B048049094	Screw M6X10	6	
36	BXF7700009	Driving wheel	1	
37	BX87459009	Set screw M6X6	2	

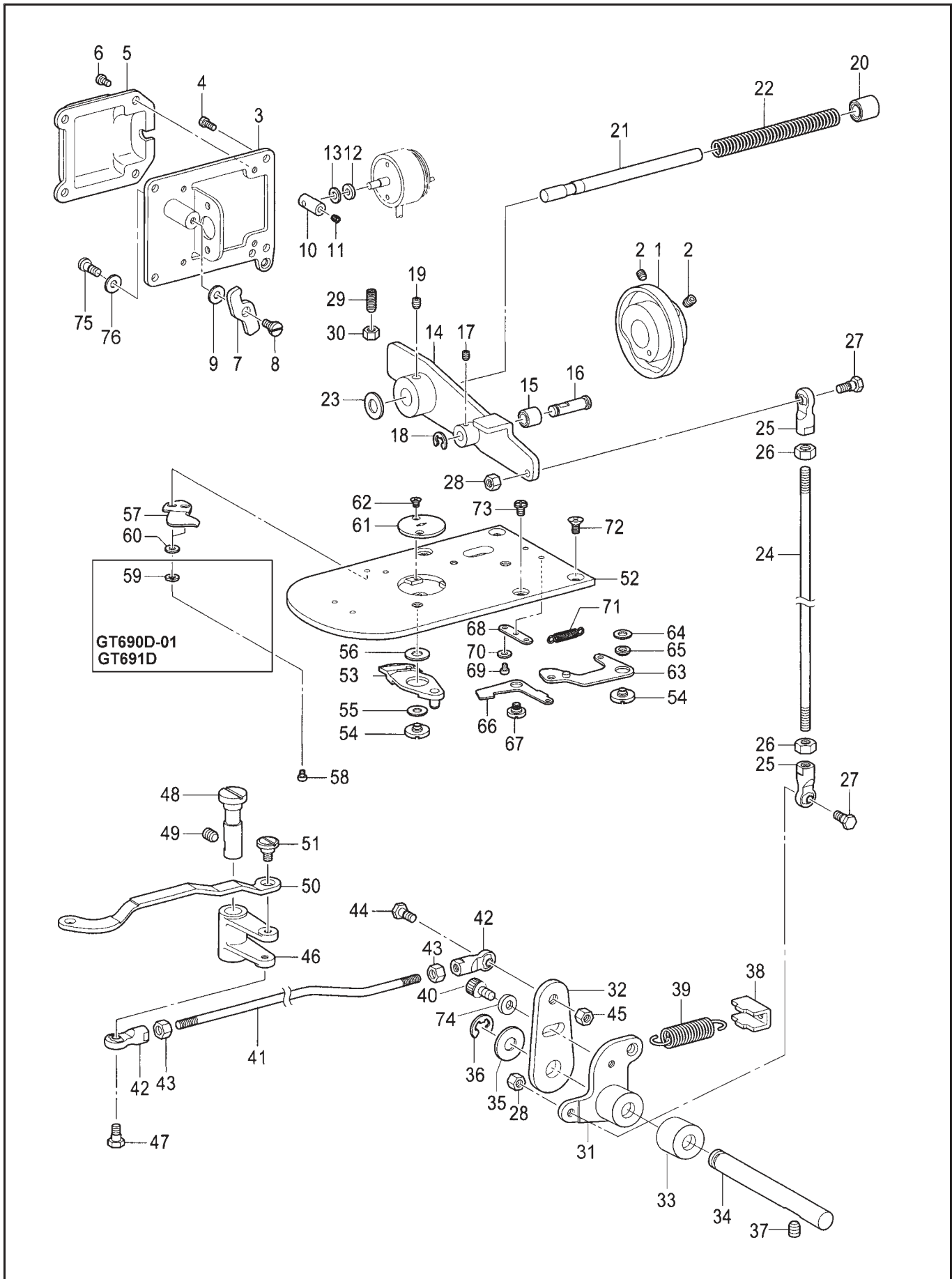
K. Thread trimmer mechanism



K. Thread trimmer mechanism

No.	Ref.No.	Description	Qt.	Note
1	213700005	Thread trimmer cam	1	
2	BX87459009	Set screw M6X6	2	
3	BXF7706009	Setting plate	1	
4	B048600294	Screw M4x8	4	
5	BXF7707009	Tr-solenoid cover	1	
6	B040600594	Screw M4x5	4	
7	BXF7705009	Pushing lever, Driving lever	1	
8	BXF7704009	Shoulder screw 7-3	1	
9	BX71410089	Washer	1	
10	BXF7703009	Solenoid lever	1	
11	B098600674	Set screw M4x4	1	
12	B956511000	Solenoid cushion	1	
13	BX08458009	Washer	1	
14	BXF7701009	Tr-driving lever	1	
15	BXF7790009	Collar , Tr-trimmer	1	
16	BXF7799009	Collar shaft	1	
17	B098600674	Set screw M4x4	1	
18	B062060768	Retaining ring E4	1	
19	BX87459009	Set screw M6x6	1	
20	B879039009	Bush 8x15	1	
21	BXF7798009	Guide shaft	1	
22	BXF7797009	Spring	1	
23	B956514000	Cushion	1	
24	BXF7795009	Thread trimmer rod V	2	
25	BX78645009	Ball joint assy	2	
26	B089040904	Nut M6	2	
27	BX78648009	Shoulder screw M6	2	
28	B089040704	Nut M6	1	
29	BX85635009	Set screw M6x19	1	
30	B089040904	Nut M6	1	
31	BXF6564009	Thread trimmer lever V	1	
32	BXF7793009	Thread trimmer lever H	1	
33	BXF7792009	Specer	1	
34	BXF7791009	Shaft, Tr-trimmer lever	1	
35	B957514009	Washer 8	1	
36	B062030768	Retaining ring E7	1	
37	B098040474	Set screw M6x6	1	
38	BXF7780009	Spring	1	
39	BXF7789009	Spring ,Extension	1	

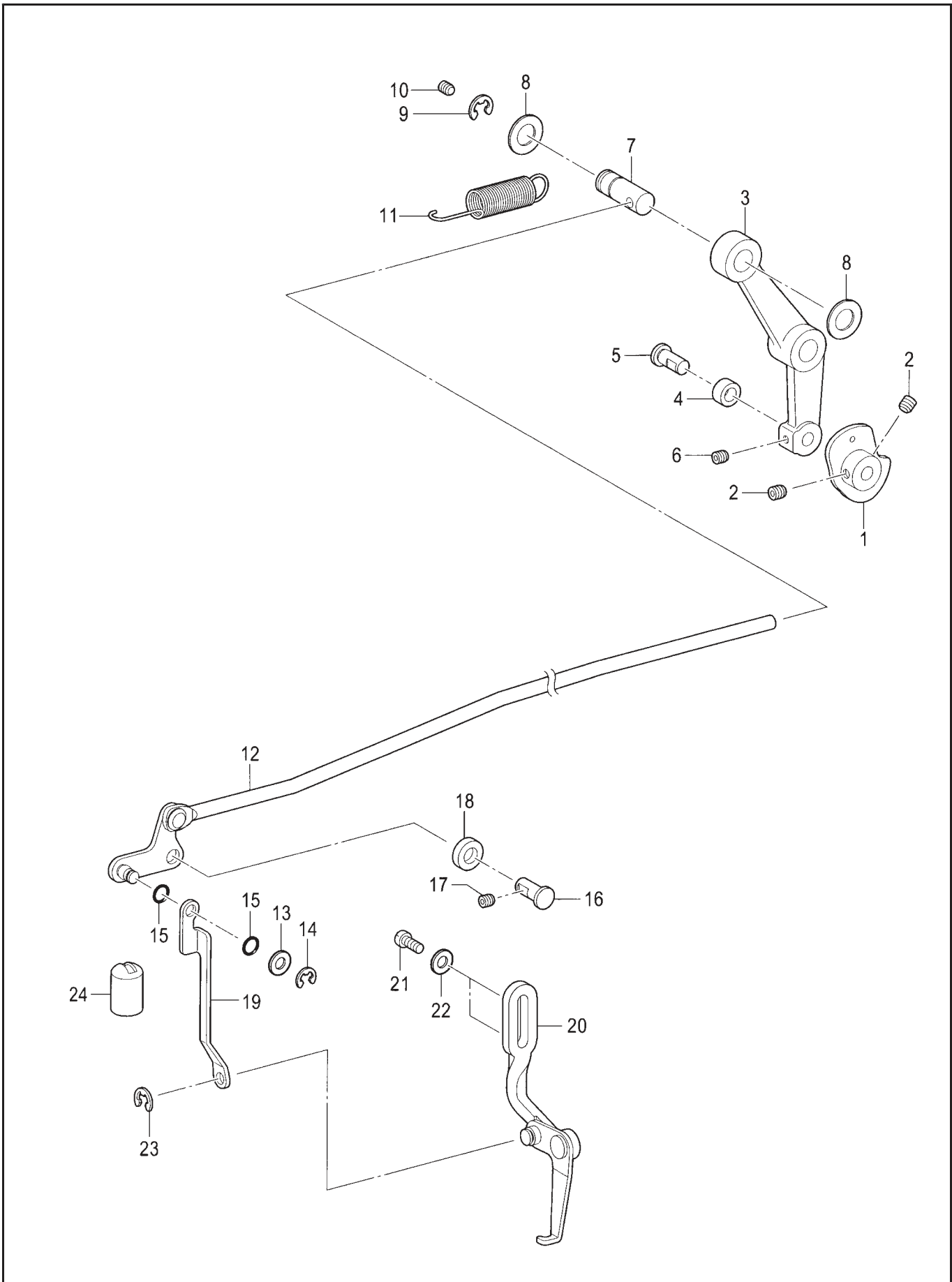
K. Thread trimmer mechanism



K. Thread trimmer mechanism

No.	Ref.No.	Description	Qt.	Note
40	S150220007	Bolt ,Socket M5x10	1	
41	BXF7787009	Thread trimmer rod H	1	
42	BX78645009	Ball joint assy	2	
43	B089040904	Nut M6	2	
44	BX78648009	Shoulder screw M6	1	
45	B089040704	Nut M6	1	
46	BXF7786009	Moving knife lever	1	
47	BXF7785009	Shoulder screw 6.35-6	1	
48	BXF7784009	Shaft,M-knife lever	1	
49	B098040474	Set screw M6x6	1	
50	BXF7783009	M-knife connecting plate	1	
51	BXF7754009	Shoulder screw 6-2.2	1	
52	BXF7455009	Needle plate SC	1	
53	BXF7770009	Moving knife assy	1	GT690-02
	BXF7454009	Moving knife assy SC	1	GT690D-01 GT691D
54	BXF7777009	Shoulder screw	2	
55	BX003305009	Washer	1	
56	BXF4713009	Washer 0.2	1	
	BXF7776009	Washer 0.3	1	
	BXF4712009	Washer 0.4	1	
57	BXF7775009	Fixed knife	1	GT690D-02
	BXF7452009	Fixed knife SC	1	GT690D-01 GT691D
58	B048700694	Screw M3x4	2	
59	B082070864	Washer ,Spring 2-3	2	GT691D
60	B085070874	Washer 3	2	
61	※	Needle holder plate	1	
62	B900740007	Screw SM2.38	2	
63	BXF7773009	Thread nipper assy	1	
64	BXF6770009	Spacer ,Thread nipper	1	
65	BXF6781009	Collar , Thread nipper	1	
66	BXF7769009	Thread ,Nipper U	1	
67	BXF7768009	Thread nipper shoulder screw 6-0.9	1	
68	BXF7767009	Plate , Spring hook	1	
69	B048700694	Screw M3x4	2	
70	B085070874	Washer , Plain 3	2	
71	BXF6645009	Spring	1	
72	BX85790909	Screw M4	2	
73	BXF7572009	Screw M4x8	2	
74	B964756009	Washer 5	1	
75	S150220001	Bolt M5x8	1	
76	S150632004	Washer ,big 5	1	

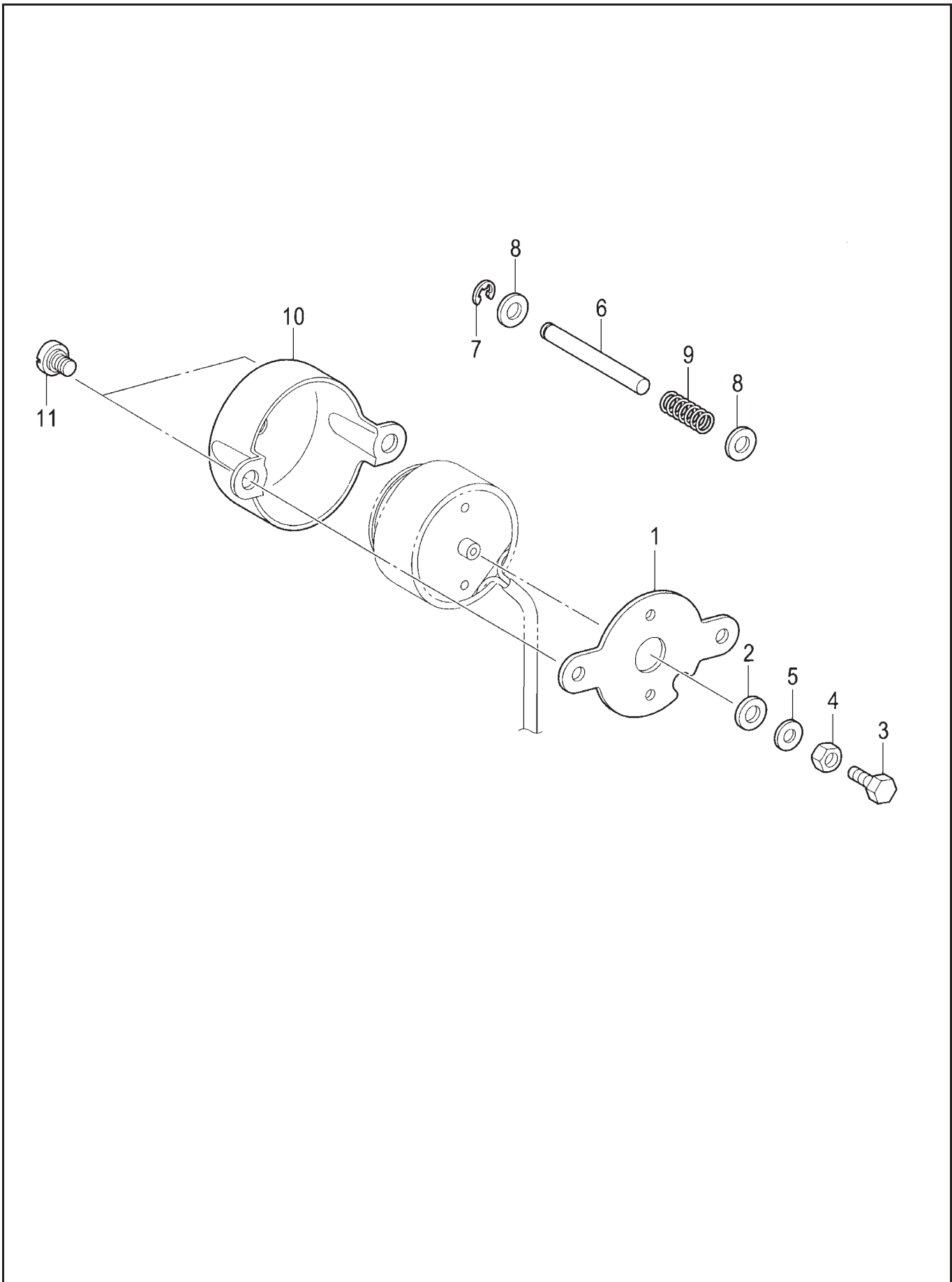
L. Thread wiper mechanism



L. Thread wiper mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7663009	Thread wiper cam	1	
2	B098040474	Set screw M6X6	2	
3	BXF7662009	Driving lever ,Thread wiper	1	
4	BXF7661009	Thread wiper roller	1	
5	BXF7669009	W-Clamp lifter roller shaft	1	
6	B098500574	Set screw M5X5	1	
7	BXF7659009	Thread wiper rod shaft	1	
8	BX80754009	Washer 10	2	
9	B062020768	Retaining ring E8	1	
10	B098500574	Set screw M5X5	1	
11	BXF7664009	Spring	1	
12	BXF7658009	Thread wiper rod assy	1	
13	B085050976	Washer 5	1	
14	B062060768	Retaining ring E4	1	
15	B029005030	O ring P5	2	
16	BXF7669009	W-Clamp lifter roller shaft	1	
17	B098500574	Set screw M5X5	1	
18	BX72077009	Collar	1	
19	BXF7652009	Connecting plate	1	
20	BXF7651909	Thread wiper arm assy	1	
21	B048609004	Screw M4X10	2	
22	B085060874	Washer 4	2	
23	B062060768	Retaining ring E4	1	
24	BXF7646009	Oil cap	1	

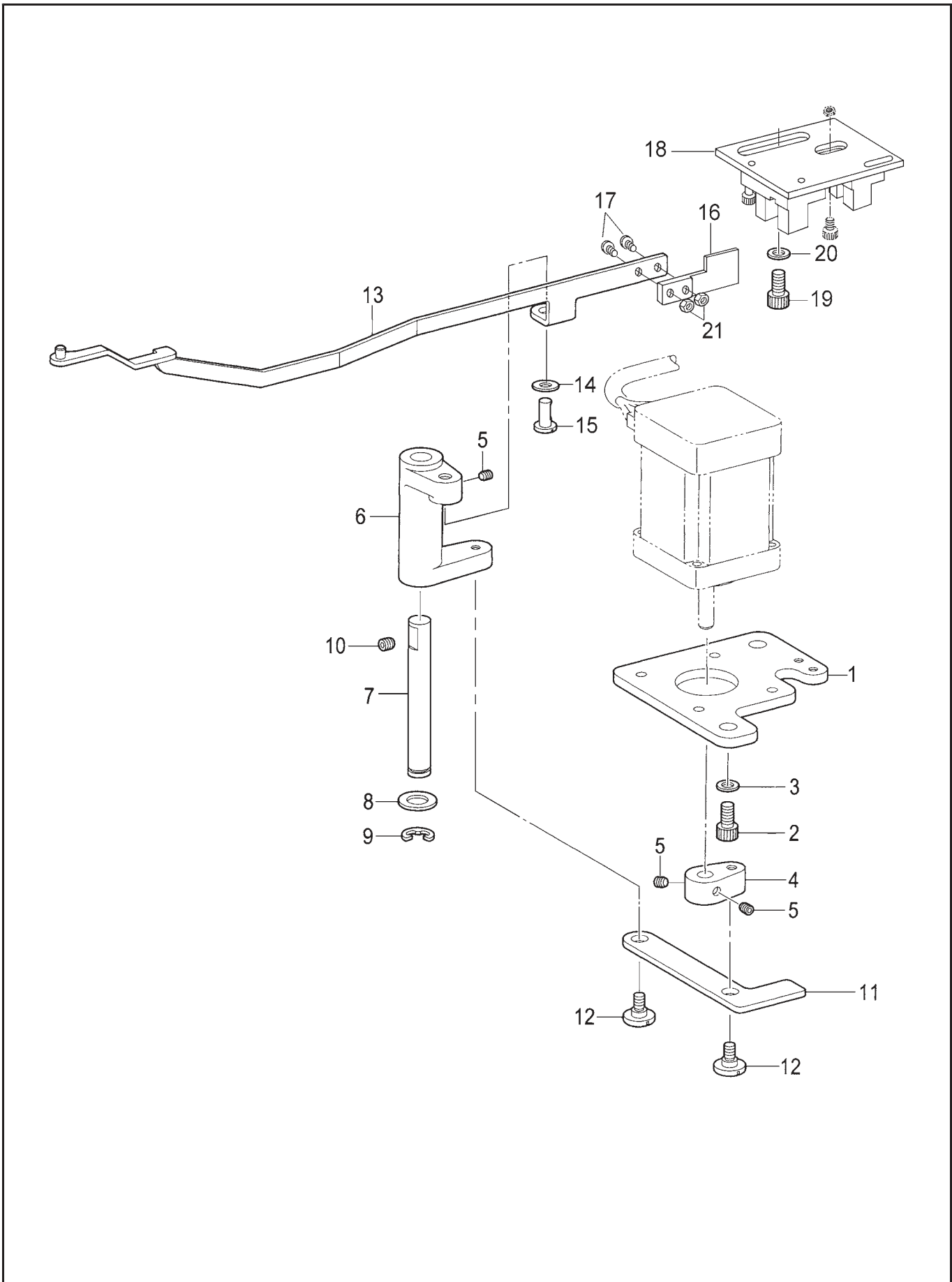
M. Tension release mechanism



M. Tension release mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7765009	Setting plate ,Solenoid	1	
2	B956511000	Solenoid cushion	1	
3	B093609095	Bolt , M4x10	1	
4	B089600704	Nut M4	1	
5	B085060874	Washer 4	1	
6	BXF7763009	Tension release bar	1	
7	B062060768	Retaining ring E4	1	
8	B085050874	Washer 5	2	
9	BXF7762009	Spring	1	
10	BXF7761009	Solenoid cover	1	
11	BXF7750009	Shoulder screw	2	

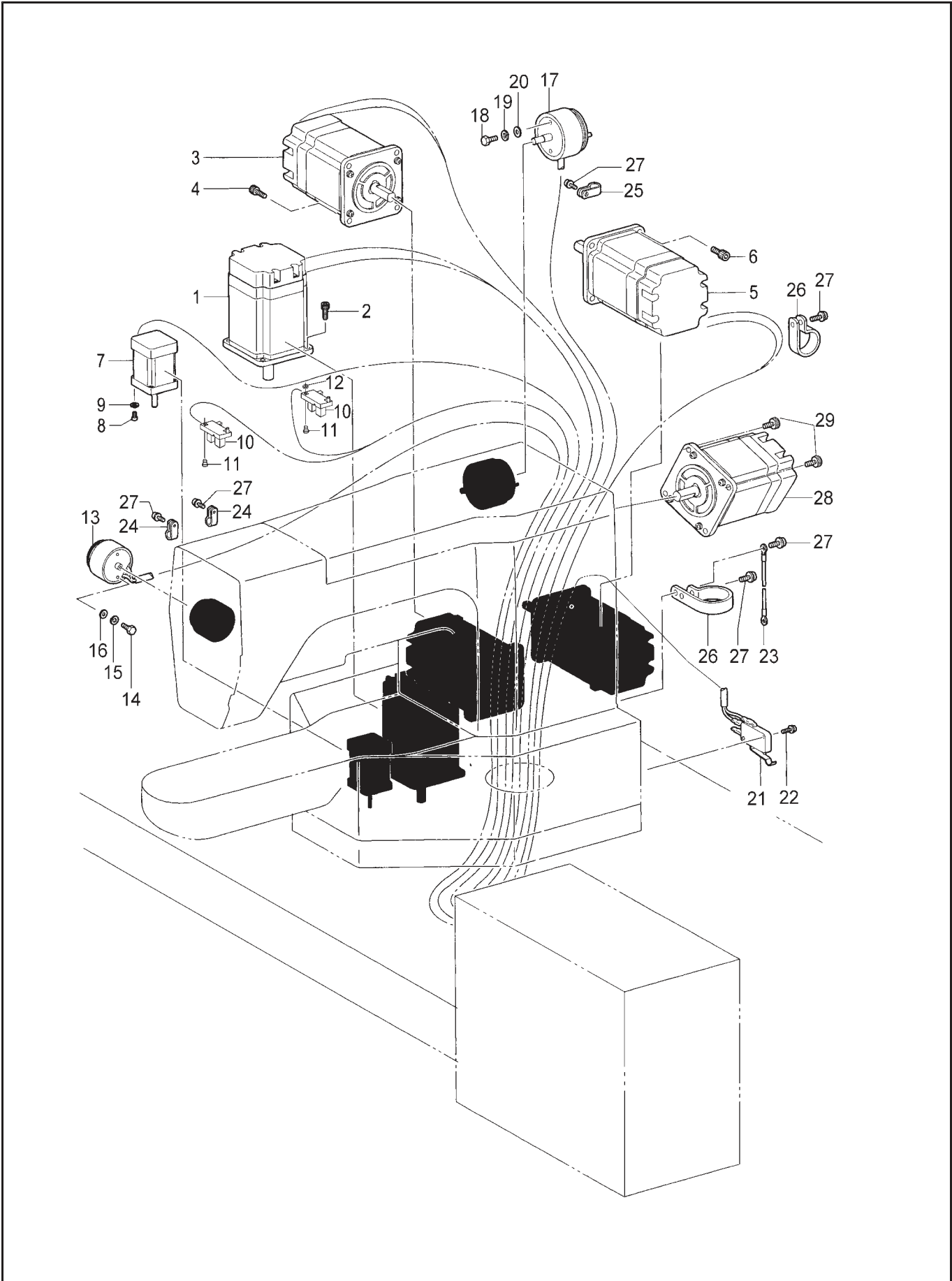
N. Thread nipper mechanism



N. Thread nipper mechanism

No.	Ref.No.	Description	Qt.	Note
1	BXF7759009	Setting plate	1	
2	B092049874	Bolt M6X12	2	
3	B085040874	Washer 6	2	
4	BXF7758009	Tn-motor lever	1	
5	B098600674	Set screw M4X4	3	
6	BXF7757809	Tn-lever	1	
7	BXF7756009	Tn-lever shaft	1	
8	B957514009	Washer 8	1	
9	B062030768	Retaining ring E7	1	
10	B098040474	Set screw M6x6	1	
11	BXF7755009	Tn-connecting plate B	1	
12	BXF6756009	Shoulder screw 6-1.8	2	
13	BXF7753009	Tn-connecting plate assy	1	
14	B955551009	Washer 6	1	
15	BX90808909	Lever shaft	1	
16	213907007	Magnetc Plate	1	
17	B093600208	Bolt M4x8	2	
18	213640002	Synchronizer installation board	1	
19	B092049874	Bolt M6x12	2	
20	B085040874	Washer 6	2	
21	B089600704	Nut M4	2	

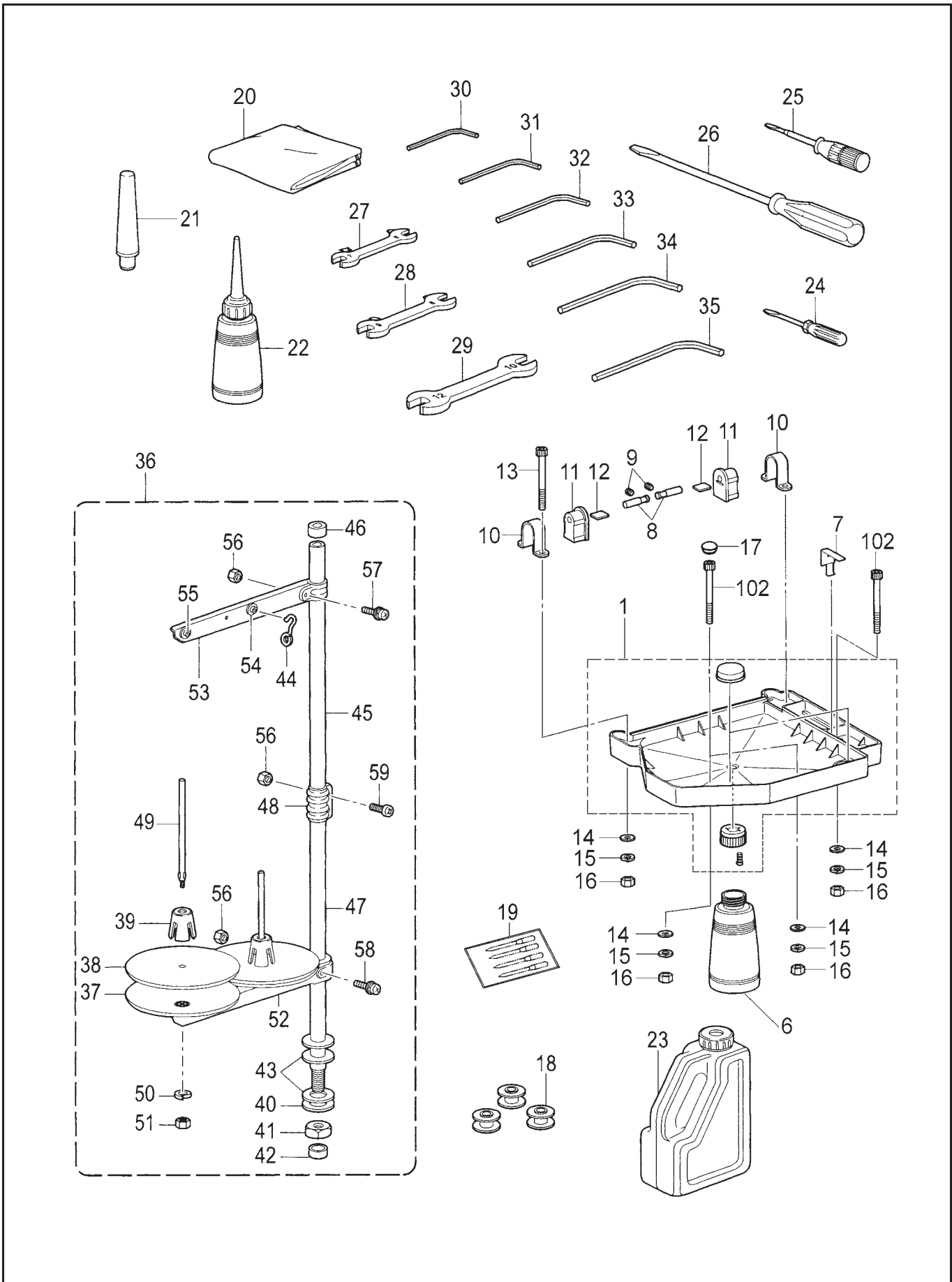
P. Control mechanism



P. Control mechanism

No.	Ref.No.	Description	Qt.	Note
1	213907002	Feeding motor assy X	1	
2	B092609074	Bolt M4X10	4	
3	213907003	Feeding motor assy Y	1	
4	B092600274	Bolt M4X8	4	
5	213907004	Footlifting motor assy	1	
6	B092609074	Bolt M4X10	4	
7	213907005	Tension motor assy	1	
8	S150220057	Screw M3x8	4	
9	B082070864	Spring washer 2-3	4	
10	213907006	Sensor	2	
11	S150237033	Screw M3X8	2	
12	S120501001	Nut M3	1	
13	213631000	Tension release solenoid assy	1	
14	B093600208	Bolt M4x8	2	
15	B085060874	Washer, Plain 4	2	
16	S150630002	Washer, Spring 4	2	
17	213701000	Thread trimmer solenoid assy	1	
18	B093600208	Bolt M4x8	2	
19	B085060874	Washer, Plain 4	2	
20	S150630002	Washer, Spring 4	2	
21	213809000	Safety switch assy	1	
22	B0F6709605	Screws M3x14DA	2	
23	213907008	Grounding line	1	
24	213000020	Cord holder (S)	2	
25	213000021	Cord holder (M)	1	
26	213000022	Cord holder (B)	2	
27	B0F5609004	Screws M4x10DB	6	
28	213907001	Main shaft motor assy	1	
29	S150220018	Screw M5x20	4	

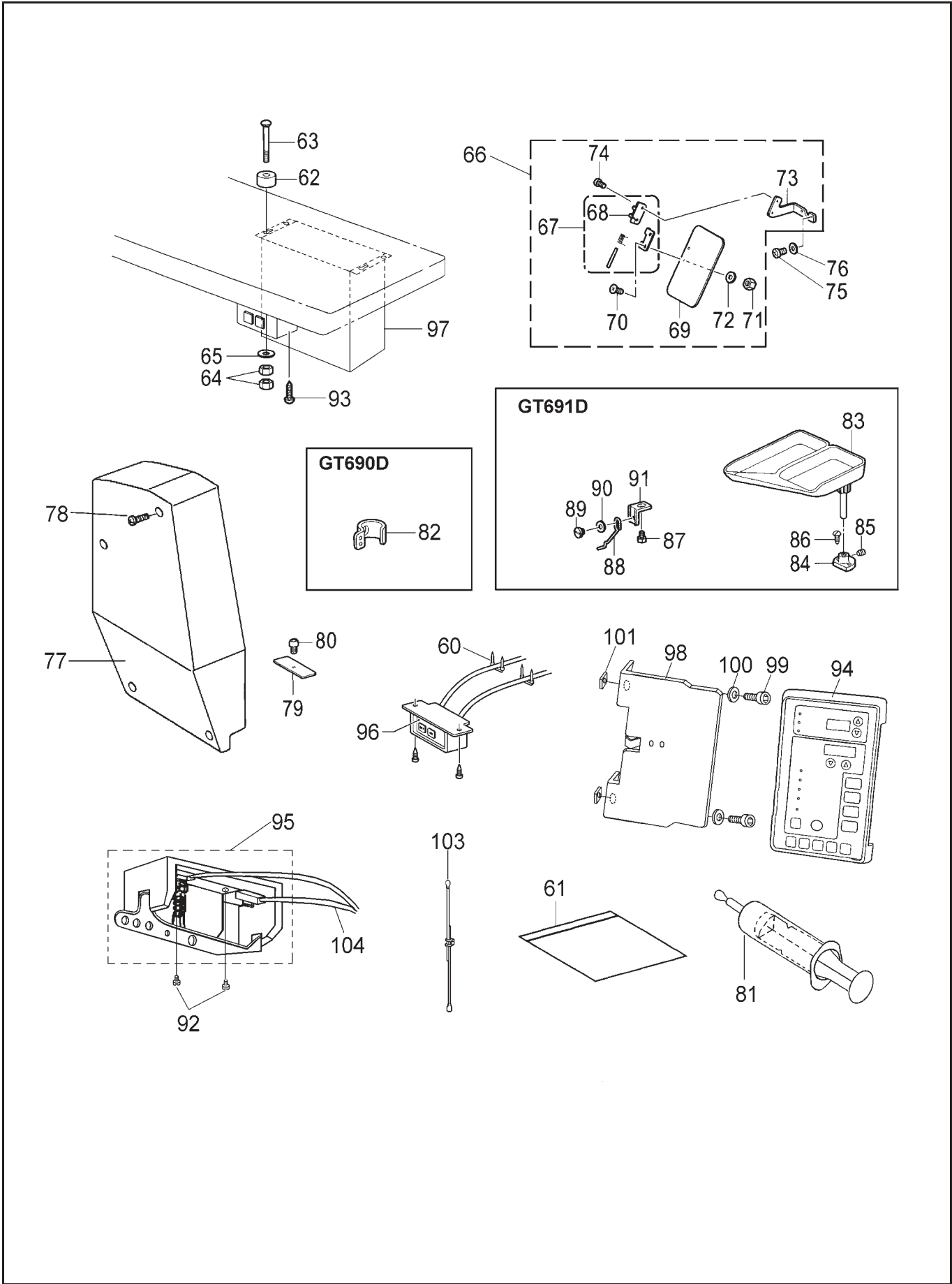
Z. Accessories



Z. Accessories

No.	Ref.No.	Description	Qt.	Note
1	213902000	Oil pan assy	1	
6	B996624008	Oiler	1	
7	BXF7280009	Spring	1	
8	BXF7726009	Pin	2	
9	B098040474	Screw M6x6	2	
10	BXF7725009	Hinge holder	2	
11	BXF7715009	Rubber cushion	2	
12	BXF7718009	Spacer	2	
13	BXF7723009	Bolt M6x75	4	
14	B085040774	Washer, Plain 6	7	
15	B082040864	Washer, Spring 2-6	7	
16	B089040904	Nut M6	7	
17	BX78846009	Rubber cap 11.5	2	
18	B951497059	Bobbin	3	
19	"	Needle assy	1 pack	
20	W060302060	Head cover	1	
21	BXF7720009	Head rest	1	
22	B996627008	Oiler assy	1	
23	BX55447009	Oil tank assy	1	
24	B968667009	Screw-driver 1.9 X52	1	
25	B992273009	Screw-driver 3.4 X70	1	
26	B909538909	Screw-driver 5.5X190	1	
27	B903331009	Wrench 6X7	1	
28	B900223009	Wrench 8X9	1	
29	B903320009	Wrench 10X12	1	
30	W050102033	Hexagonal wrench 1.5	1	
31	W050102034	Hexagonal wrench 2	1	
32	W050102040	Hexagonal wrench 2.5	1	
33	W050102035	Hexagonal wrench 3	1	
34	W050102036	Hexagonal wrench 4	1	
35	W050102037	Hexagonal wrench 5	1	
36	BX08347608	Cotton stand assy	1	
37	BX59827009	Spool stand base	2	
38	B950928000	Spool mat	2	
39	BX59828909	Spool cushion	2	
40	B950804008	Washer, Plain 16	1	
41	BX72462009	Nut	1	
42	B950936000	Column cap	1	
43	BX09005000	Rubber washer	2	
44	BX08363909	Spring	1	
45	B950938007	Column pipe	1	
46	B950936000	Column cap	1	
47	B954998007	Column pipe	1	
48	B950937007	Column joint	1	
49	B950931008	Spool shaft	2	
50	B082050864	Washer, Spring 2-5	2	
51	B089500904	Nut, M5	2	
52	BX08332008	Spool holder	1	
53	BX08323008	Thread hanger	1	
54	B950927000	Thread hanger base	2	
55	B968110009	Thread bush	2	
56	B089500904	Nut M5	4	
57	BX73072009	Screw M5X14	1	
58	BX73073009	Screw M5X32	1	
59	B048509604	Screw M5X14	2	

Z. Accessories











Z. Accessories

No.	Ref.No.	Description	Qt.	Note
60	B800910009	Staple	7	
61	B988119009	Accessory bag	1	
62	BX54728000	Rubber washer	4	
63	B966567009	Bolt M6X63	4	
64	B089040904	Nut M6 M6	8	
65	B085040774	Washer, Plain 6	8	
66	213901000	Eye guard assy	1	
67	BX66627009	Hinge assy	1	
68	BX73491009	Eye guard assy	1	
69	BX66625009	Eye guard	1	
70	B049700294	Screw M3X8	2	
71	B089700904	Nut M3	2	
72	B084070874	Washer, Plain 3	2	
73	BXF6906009	Eye guard holder	1	
74	B048700504	Screw M3X5	2	
75	B048600494	Screw M4X6	2	
76	B084060974	Washer, Plain 4	2	
77	213000005	Back cover	1	
78	B048049094	Screw M6X10	4	
79	BXF7621009	Feed plate cover	1	
80	B957053909	Screw SM4.37	1	
81	WWW8417009	Grease unit	1	
82	BXF7475009	Needle bar thread guide B	1	GT690D-02
83	BX92468001	Button tray	1	GT691D
84	213000014	Button tray holder	1	GT691D
85	B098500574	Set screw M5x5	1	GT691D
86	213900006	Wood screw 4x16	2	GT691D
87	B964740008	Bolt SM4.76x7	1	GT691D
88	B951171009	Spring A	1	GT691D
89	B990895008	Bolt SM3.57	1	GT691D
90	B085440978	Washer, Plain S3.18	1	GT691D
91	B951172009	Spring support	1	GT691D
92	S150241012	Wood screw 4x25	2	
93	S150241013	Wood screw 4x16	2	
94	213907009	Operation panel assy	1	
95	213903000	Foot switch assy	1	
96	213907012	Power supply switch assy	1	
97	213907000	Control box	1	
98	213000008	control box installation board	1	
99	B092049874	Bolt M6x12	2	
100	B085040874	Washer, Plain 6	2	
101	213000010	Rubber cushion	2	
102	S150220055	Bolt M6x70	3	
103	213907016	Rod assy	1	
104	213907011	Foot switch cable	1	



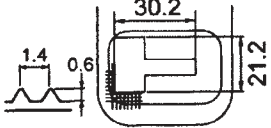
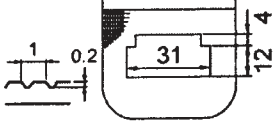
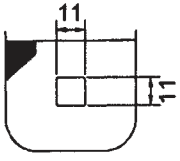
Sp. Different parts list

◎ In the following table, parts marked with ★ are common with the GT680 (Electronic Lockstitch Tacker).

		GT690D		GT691D
Spec.		-2	-1	
(K-61) Needle hole plate 		(φ2.4) BXF7774009	(φ2.2) BXF7457909	(φ1.6) BXF7456909
(F-48) Shuttle hook assy 		B958423809 ★	B958425709 <A> ★	B958425709 <A> ★
(F-40) Shuttle race base 		B958424909 ★	B958428909 <A> ★	B958428909 <A> ★
(H-14) Spring, tension 		B903404009 ★	B906585009 ★	B906585009 ★
(H-9) Thread take-up spring 		B966522009 ★	B965591009 ★	B965591009 ★
(H-25, H-24) Needle bar thread guide  A  B		BXF7853009	BXF7475009	BXF7475009
(B-34, Z19) Needle 		DP×17 <#19> ★ B965464091	DP×5 <#14> ★ B903695096	DP×17 <#12> ★ BX73182098

◎ Standard sizes for work clamps and feed plates are as follows:

(The actual sewing area has 1.5mm margin on every size; inside the lines which the dimensions indicate.)

		GT690D		GT691D
Spec.		-2	-1	
(C-68, 69) Work clamp 	R	B957402909 ★	B958333009 ★	
	L	B956583009 ★	B958332009 ★	
(C-28) Feed plate 		BX61413009 (For 3mm use) 	BXF7403009 (For 2mm use Submerged-type, L) 	BXF7404009 

Ga . Gauge parts list

<Gauge parts >

The following are provided as optional gauge parts .

Each work clamp pair and presser pair are used in combination with the feed plate directly below them.

(Work clamp is common with to the GT680)

	1	2	3	4
R	B958329009 For denim	B957809009	B957807009	BX00104009
L	B958328009 For denim	B957808009	B957806009	BX00103009
(C-68, 69) Work clamp				
(C-28) Feed plate	BXF7499009 For denim	BXF7498009	BXF7497009	BXF7496009

	5	6	7
R	BX77363009 (30mm)	B957809009 For denim	B958333009
L	BX77362009 (30mm)	B957808009 For denim	B958332009
(C-68, 69) Work clamp			
(C-28) Feed plate	BXF7495009 (30mm)	BXF7494009 For denim	BXF7498009

	8		9		10		11	
R	BX64339009 For straight bar tacking		BX64339009 For straight bar tacking/submerged		BX64336009 For vertical bar tacking		BX64336009 For vertical bar tacking/submerged	
L	BX64330009 For straight bar tacking		BX64330009 For straight bar tacking/submerged		BX64337009 For vertical bar tacking		BX64337009 For vertical bar tacking/submerged	
(C-68, 69) Work clamp								
(C-28) Feed plate	BXF7493009 For straight bar tacking		BXF7492009 For straight bar tacking/submerged		BXF7491009 For vertical bar tacking		BXF7489009 For straight bar tacking/submerged	
(C) Work clamp Bolt	B954004009	BX51218009	B954004009	BX51218009	B954004009	BX51218009	B954004009	BX51218009

Ga. Gauge parts list

	12	13	14
R	BXF8870009 For vertical bar tacking	BXF8877009 For vertical bar tacking	B958331009 Submerged-type.S
L	BXF8881009 For vertical bar tacking	BXF8878009 For vertical bar tacking	B958320009 Submerged-type.S
(C-68, 69) Work clamp			
(C-28) Feed plate	BXF7480009 For vertical bar tacking	BXF7488009 For vertical bar tacking	BXF7490009 Submerged-type.S
(C) Work clamp Bolt	BX51101009; B093420598		

	15	16	17
R	BX64333009 For circular stitching	BX64320009 For crescent bar tacking	BXF8874009 For crescent bar tacking
L	BX64334009 For circular stitching	BX64331009 For crescent bar tacking	BXF8875009 For crescent bar tacking
(C-68, 69) Work clamp			
(C-28) Feed plate	BXF7487009 For circular stitching	BXF7486009 For crescent bar tacking	BXF7485009 For crescent bar tacking
(C) Work clamp Bolt	B954004009	BX51218009	B954004009

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213000004	2	5	B029007430	14	18	B062020968	6	18		32	15
213000005	36	77	B030402200	6	17	B062030768	14	37		32	19
213000008	36	98	B030414200	10	18		22	36	B085070874	2	18
213000010	36	101	B030422250	10	33		30	9		24	60
213000011	4	36	B039079260	8	73	B062040764	8	43		24	70
213000012	4	38	B040600594	22	6		6	12	B085440978	36	90
213000014	36	84	B048040294	16	3		10	30	B089040704	22	28
213000020	32	24		16	9	062050768	20	10		24	45
213000021	32	25		16	27		20	19	B089040904	22	26
213000022	32	26	B048049094	2	6	B062060768	22	18		22	30
213100006	4	34		10	50		26	14		24	43
213101001	4	12		20	35		26	23		34	16
213102000	4	17		36	78		28	7		36	64
213300001	10	36	B048420298	12	29	B063408068	10	4	B089500904	34	51
213420002	14	34	B048420598	12	25	B063709068	10	27		34	56
213501000	16	12	B048430698	18	31	B063850468	12	22	B089600704	28	4
213631000	32	13	B048500494	18	2	B082040864	34	15		30	21
213640002	30	18		18	4	B082050864	8	49	B089600894	10	42
213700005	22	1		18	6		34	50	B089700904	36	71
213701000	32	17		20	29	B082070864	24	59	B092047074	6	6
213809000	32	21	B048509094	2	9		32	9	B092047574	6	34
213900006	36	86	B048509604	34	59	B084060974	36	76	B092049474	8	70
213901000	36	66	B048600294	22	4	B084070874	36	72		10	44
213902000	34	1	B048600494	16	7	B084070974	14	24	B092049874	6	31
213903000	36	95		16	11	B085040774	34	14		6	36
213907000	36	97		36	75	B085040774	36	65		10	35
213907001	32	28	B048609004	2	20	B085040874	6	32		30	2
213907002	32	1		26	21		6	37		30	19
213907003	32	3	B048609894	20	13		8	71		36	99
213907004	32	5	B048700494	14	25		10	45	B092500274	8	48
213907005	32	7	B048700504	36	74		30	3		8	56
213907006	32	10	B048700694	2	17		30	20	B092509474	4	3
213907007	30	16		4	5		36	100	B092509878	14	39
213907008	32	23		24	58	B085040974	20	24	B092600274	8	72
213907009	36	94		24	69	B085050874	28	8		32	4
213907011	36	104	B048750494	20	8	B085050876	8	50	B092609074	6	21
213907012	36	96	B049700294	36	70	B085050976	26	13		32	2
213907016	36	103	B062020768	10	11	B085060874	10	41		32	6
B006700597	2	12		10	24		26	22		4	25

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	30	17		20	34	B950938007	34	45	B958426909	14	23
	32	18		26	6	B951171009	36	88	B959141009	12	5
B093609095	28	3		26	10	B951172009	36	91	B959142009	12	4
B096330488	4	33		26	17	B951205009	18	15	B960718001	2	1
B096340478	12	9		36	85	B951490709	14	41		2	4
B096420478	12	3	B098600674	14	12	B951497059	14	45	B964020000	16	23
B098040474	4	9		20	17		34	18	B964116009	12	12
	6	8		20	23	B951498009	14	44	B964740008	36	87
	6	13		22	11	B951624009	20	9	B964756008	8	55
	6	15		22	17	B951886009	18	23	B964756009	12	11
	6	19		30	5	B952229009	18	27		24	74
	6	27	B098700774	4	19	B954998007	34	47	B965465009	4	22
	10	13	B099431798	12	16	B955551009	30	14	B965664009	18	16
	10	22	B0F5609004	32	27	B956511000	22	12		18	22
	10	28	B0F6709605	32	22		28	2		20	30
	10	48	B800910009	36	60	B956514000	22	23	B966567009	36	63
	14	9	B879039009	22	20	B956769009	14	43	B966652009	4	27
	14	16	B900223009	34	28	B956771909	14	42	B967439000	16	21
	14	35	B900608006	18	17	B957050000	14	26	B968110009	34	55
	18	28	B900609089	20	31		16	29	B968667009	34	24
	22	37	B900740007	24	62	B957053909	6	29	B980662009	20	22
	24	49	B900974009	18	20		36	80	B988119009	36	61
	26	2	B901871008	2	15	B957061009	18	7	B990743009	4	18
	30	10	B903320009	34	29	B957188009	16	17		8	42
	34	9	B903331009	34	27	B957270000	12	1	B990895008	36	89
B098040574	8	45	B903366009	10	40	B957272009	10	47	B992273009	34	25
	10	32		12	6	B957283009	12	2	B993176009	2	2
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B098500574	4	21	B906661009	2	8	B957542009	8	59	B994336009	4	32-1
	4	31	B908470009	10	8	B957543000	8	61	B995944009	12	35
	6	4	B909538909	34	26	B957626009	12	7	B995945009	12	34
	8	46	B929018009	4	32	B957997009	6	11	B995946909	12	33
	8	65	B950804008	34	40	B958173009	20	7	B995952009	12	26
	10	12	B950927000	34	54	B958174009	20	6	B995954009	12	21
	10	20	B950928000	34	38	B958226009	18	30	B995962909	12	13
	10	25	B950931008	34	49	B958227000	18	29	B995963009	12	14
	14	11	B950936000	34	42	B958232009	4	35	B996624008	34	6

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BX003305009	24	55	BX73073009	34	58	BXF6777009	18	3	BXF7622009	4	23
BX03777009	16	22	BX73491009	36	68	BXF6781009	24	65	BXF7623009	8	66
BX07451009	12	28	BX76098000	16	20	BXF6888009	16	28	BXF7626009	4	4
BX07453009	12	31	BX78645009	22	25	BXF6906009	36	73	BXF7646009	26	24
BX07642909	12	30		24	42	BXF6910009	14	14	BXF7650009	4	4
BX08323008	34	53	BX78648009	22	27	BXF6913009	6	14	BXF7651909	26	20
BX08332008	34	52	BX78846009	34	17	BXF6920009	4	8	BXF7652009	26	19
BX08347608	34	36	BX79078009	18	12	BXF6921009	14	14	BXF7658009	26	12
BX08363909	34	44		20	32	BXF6922009	14	14	BXF7659009	26	7
BX08458009	22	13	BX80754009	10	10	BXF6923009	14	14	BXF7661009	26	4
BX08681809	14	20		10	23	BXF6931009	4	7	BXF7662009	26	3
BX09005000	34	43		26	8	BXF6939009	20	5	BXF7662009	26	3
BX09416009	12	38	BX82066009	2	23	BXF6964009	18	21	BXF7663009	26	1
BX50581000	16	14	BX82695000	16	15	BXF6965009	8	67	BXF7664009	26	11
BX51224009	14	32	BX85635009	22	29	BXF6970009	8	62	BXF7665009	10	34
BX51780009	12	27	BX85790909	24	72	BXF7280009	34	7	BXF7666009	10	29
BX51789009	12	32	BX85875009	4	15	BXF7302009	6	33	BXF7667009	10	26
BX51791009	12	24	BX87459009	4	14	BXF7303009	10	37	BXF7668009	10	21
BX51792009	12	23		14	8	BXF7406009	6	24	BXF7669009	10	19
BX51793009	12	20		20	37	BXF7452009	24	57		26	5
BX51794009	12	19		22	2	BXF7454009	24	53		26	16
BX51795009	12	17		22	19	BXF7455009	24	52	BXF7670009	10	2
BX54233000	16	19	BX87692008	20	15	BXF7470009	10	43	BXF7671009	10	17
BX54728000	36	62	BX90672009	20	18	BXF7475009	18	24	BXF7672009	10	16
BX55447009	34	23	BX90808909	30	15		36	82	BXF7673009	10	15
BX58017009	12	18	BX90842009	20	26	BXF7479009	10	46	BXF7674009	10	14
BX58034009	12	37	BX92468001	36	83	BXF7481009	10	39	BXF7675009	10	9
BX58038009	12	36	BX98411000	18	10	BXF7482009	10	5	BXF7676009	10	6
BX59827009	34	37	BX98669009	18	13	BXF7506809	16	6	BXF7678009	10	3
BX59828909	34	39		20	33	BXF7507809	16	5	BXF7680009	8	39
BX61112009	12	15	BXF4712009	24	56	BXF7572009	6	23	BXF7681009	10	1
BX65261000	16	16	BXF4713009	24	56		24	73	BXF7682009	8	64
BX66625009	36	69	BXF6038009	10	49	BXF7576009	6	26	BXF7683009	8	57
BX66627009	36	67	BXF6042909	14	4	BXF7577009	6	3	BXF7684009	8	53
BX71410089	22	9	BXF6564009	22	31	BXF7582009	4	24	BXF7685009	8	52
BX72077009	26	18	BXF6645009	24	71	BXF7611009	4	2	BXF7686009	8	51
BX72462009	34	41	BXF6646009	2	10	BXF7613009	4	16	BXF7687009	8	47
BX72761009	2	21	BXF6648009	16	26				BXF7688009	8	41
BX73040009	2	22	BXF6756009	30	12				BXF7689009	8	40

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BXF7700009	20	36	BXF7770009	24	53	BXF7828009	16	8	BXF8484009	8	63
BXF7701009	22	14	BXF7773009	24	63	BXF7831009	16	4	BXF9122009	20	25
BXF7703009	22	10	BXF7775009	24	57	BXF7832009	14	36	BXF9126009	20	12
BXF7704009	22	8	BXF7776009	24	56	BXF7834009	14	33	BXF9708009	16	18
BXF7705009	22	7	BXF7777009	24	54	BXF7835009	14	31	BXF9881909	18	18
BXF7706009	22	3	BXF7780009	22	38	BXF7836909	14	29	BXF9931008	8	58
BXF7707009	22	5	BXF7783009	24	50	BXF7837009	14	15	BXH5320009	6	7
BXF7715009	34	11	BXF7784009	24	48	BXF7843009	4	4	S120501001	32	12
BXF7718009	34	12	BXF7785009	24	47	BXF7844009	2	16	S150217009	14	21
BXF7720009	34	21	BXF7786009	24	46	BXF7845009	2	14		14	28
BXF7723009	34	13	BXF7787009	24	41	BXF7846009	2	13		14	30
BXF7725009	34	10	BXF7789009	22	39	BXF7847009	2	11	S150220001	24	75
BXF7726009	34	8	BXF7790009	22	15	BXF7850009	18	1	S150220007	24	40
BXF7728009	6	35	BXF7791009	22	34	BXF7852009	18	26	S150220018	32	29
BXF7729009	6	30	BXF7792009	22	33	BXF7853009	18	25	S150220055	36	102
BXF7730009	6	16	BXF7793009	22	32	BXF7854009	18	19	S150220057	32	8
BXF7731009	16	13	BXF7795009	22	24	BXF7855009	18	11	S150237033	32	11
BXF7737009	6	25	BXF7797009	22	22	BXF7856009	18	8	S150241012	36	92
BXF7738009	6	22	BXF7798009	22	21	BXF7858009	18	5	S150241013	36	93
BXF7739009	6	20	BXF7799009	22	16	BXF7861009	16	10	S150435018	2	24
BXF7742009	6	10	BXF7800909	2	19	BXF7864009	16	24	S150630002	32	16
BXF7743009	6	9	BXF7802009	8	54	BXF7865009	16	2		32	20
BXF7744009	6	5	BXF7804009	4	6	BXF7866009	16	1	S150632004	24	76
BXF7746009	6	2		4	10	BXF7868909	14	27	S150866006	4	13
BXF7747009	6	1	BXF7809009	4	1	BXF7869009	14	22	S150866037	4	11
BXF7750009	28	11	BXF7810009	20	2	BXF7871009	14	19	T2D280203	4	37
BXF7753009	30	13	BXF7811009	20	28	BXF7872909	14	17	W050102033	34	30
BXF7754009	24	51	BXF7812009	20	27	BXF7873009	14	13	W050102034	34	31
BXF7755009	30	11	BXF7813009	20	21	BXF7876009	14	10	W050102035	34	33
BXF7756009	30	7	BXF7814009	20	20	BXF7877009	14	7	W050102036	34	34
BXF7757809	30	6	BXF7815009	20	16	BXF7879009	8	44	W050102037	34	35
BXF7758009	30	4	BXF7816009	20	14		10	31	W050102040	34	32
BXF7759009	30	1	BXF7817009	20	11		14	5	W060302060	34	20
BXF7761009	28	10	BXF7818009	4	4	BXF7882009	14	3	www8417009	36	81
BXF7762009	28	9	BXF7819009	20	4	BXF7883009	14	2			
BXF7763009	28	6	BXF7820009	16	25	BXF7884009	14	1			
BXF7765009	28	1	BXF7821009	20	1	BXF7886009	4	29			
BXF7767009	24	68	BXF7823009	16	23	BXF7887009	4	28			
BXF7768009	24	67	BXF7826009	14	38	BXF7888009	4	26			

● Besides adjusting stitch, please laypeople don't debug or maintain.

● Parts are subject to changes in design without prior notice.

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