

HIGHLEAD

HLK-3020 (TH)

ELECTRONIC PATTERN SEWING MACHINE

Instruction Manual
Parts Catalog

SHANGHAI BIAOZHUN HAILING SEWING MACHINERY CO., LTD.

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FOR YOUR SAFETY!

If you operate the sewing machine first time, please make sure to read the following instructions for your safety and proper operation.

In this technical manual, the notice **CAUTION** is mentioned at some paragraph to attract your attention for the safety. Please keep it in mind whenever you work with the sewing machine.

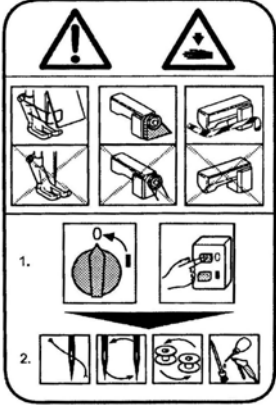


CAUTION is used as the notice to warn a possible danger to cause a wound

This technical manual explains the instructions how to operate and maintain the sewing machine. All information in this technical Manual are subject to change without notice.

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Explanations for the warning signs

NO	Warning sign	Meanings of warning sign
1		<p>Caution for sewing machine operation:</p> <p>Warning to operate the sewing machine without safety guards and to prohibit doing any operation except sewing while the power is turned on.</p> <p><Interpretation of sign></p> <ul style="list-style-type: none"> ·Do not operate without finger guard, eye guard, belt cover and other safety devices. ·Before threading, changing needle and bobbin clearing, oiling etc. switch off main power switch.
2		<p>Caution for a wound on the fingers:</p> <p>Warning to a possible danger to cause a wound on the fingers under the specified operation.</p>
3		<p>Caution for the fingers:</p> <p>Warning to a possible danger to be caught the fingers in the machine under the specified operation.</p>

USE OF THE ENVIRONMENT

Caution

★ For avoiding the sewing machine from the troubles, please do not operate the sewing machine under the following conditions.

1. Temperature and humidity

➤ During operating:

The atmosphere temperature should not exceeded more 350°C(95°F) or less 5°C(41°F).

During transportation:

The atmosphere temperature should not exceeded more 55°C(131°F) or less -10°C(18°F).

➤ The relative humidity in the atmosphere should not exceeded more 85% or less 45%.

2. Atmosphere for the machine operation

➤ In the atmosphere filled with dust or corrosive gas.

➤ In the atmosphere filled with flammable or explosive gas.

3. Power source voltage

➤ In the place where the power fluctuation exceeds more or less 10% of the fixed power voltage.

➤ In the place where the power source cannot supply enough voltage to keep the motor running.

4. Power source voltage

➤ In the place where the power fluctuation exceeds more or less 10% of the fixed power voltage.

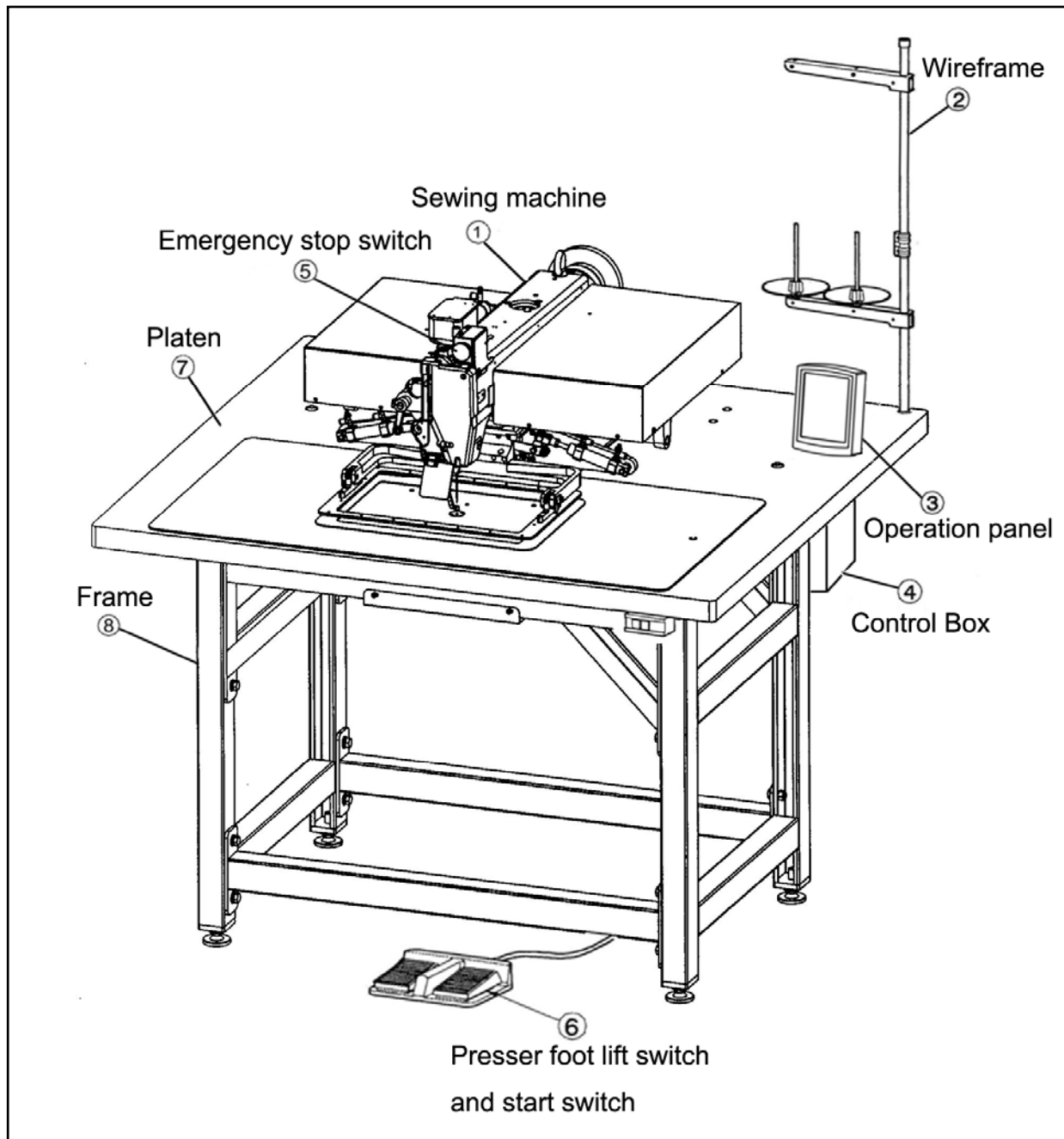
➤ In the place where the power source cannot supply enough voltage to keep the motor running.

5. Noise

➤ In the place near a high frequency transmitter or a high frequency welder.

➤ In the place filled with strong electromagnetic radiation or magnetic field.

1. STRUCTURE OF HLK-3020(TH) SEWING MACHINE



2. SPECIFICATION

Sewing area:	X-Direction(left / right) 300mm Y-Direction(forward / backward) 200mm
Maximum sewing speed:	800 rpm
Sewing speed:	variable from 100 to 800 rpm
Stitch length:	0.1 to 12.7mm
Stitch type:	Single needle lock stitch

Needle bar stroke :	56mm
Thread take up lever stroke:	96mm
Class of needle:	DY×3 26# (the standard specification)
Presser foot lift:	20 mm
Presser foot alternation:	Variable from 4mm to 10mm
Work holder lift:	30mm
Hook:	Large size shuttle hook
Lubrication system:	Manual oiling and replenishment with the oil wicks from the oil tanks
Lubrication oil:	SF sewing machine oil
X—Y drive system:	Stepping motor, timing belt and linear guide rail drive Intermittent or continuous feeding
Machine dimension:	1,200mm (W) × 1,100mm (L) × 1,300mm (H)
Net Weight:	130kgs
Main motor:	750W

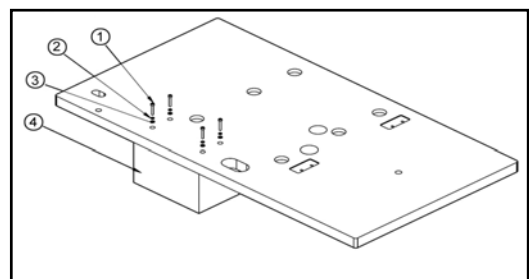
3. INSTALLATION

Caution

- ★ The machine should be installed by the specialists who have enough experience for the sewing machine installations.
- ★ All the necessary electric wiring should be done by electric engineers who are qualified for electric wiring.
- ★ If any damage or fault is found on the machine at the installation, please do not operate until it be repaired.
- ★ Please do not operate the sewing machine with excessive modifications from the standard specification.

3-1.Installation of the control box

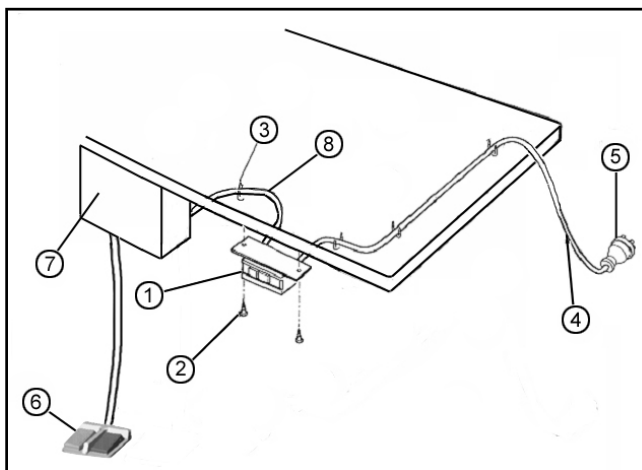
If the control box is purchased without assembling to the table, the control box has to be installed underneath the table. Please install the control box with the instruction in the paragraph.



3-2.Installation of the power switch

If the power switch is purchased without assembling to the table, the power switch has to be attached with the following procedure.

- (1) Mount the power switch①with the wood screw②underneath the table as shown on the figure.
- (2) Fix the electric cords with the staples③ underneath the table.
- (3) Connect the plug⑧of the power switch① to the control box⑦.
- (4) Attach the power plug⑤to another end of the power switch cord④.



3-3.Connection of the foot switch

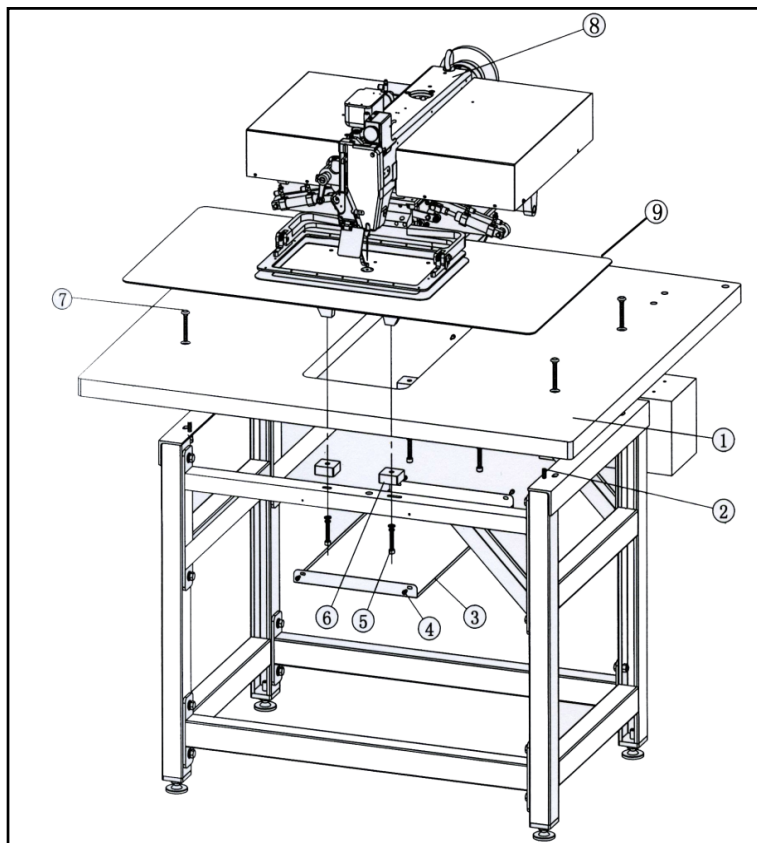
Connect the foot switch⑥to the relevant socket (the middle socket) on control box⑦.The foot switch is enclosed in the accessory box.

3-4.Installation of the sewing machine head

Caution

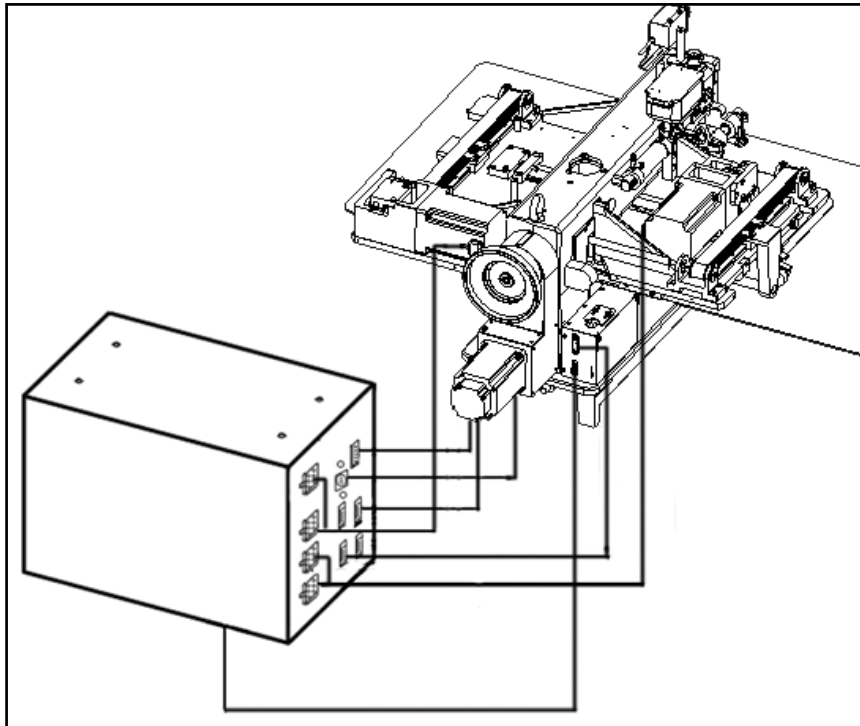
★ For the safety, lift and move the sewing machine heads with powerful lifting equipment under monitor of more than two people.

- (1) Install the stand and put tabletop① on it.
- (2) Take out the support blocks③from accessory box and place them on the transoms of stand.
- (3) Put the sewing machine head⑧ into the cut-out of machine head and make sure the four feet of machine heads are seating on the support blocks.
- (4) Set machine head onto stand with Allen screws⑤, and washers from accessory box as following figure shows.
- (5) Adjust the Allen screws② to raise the table top up onto the bottom of big slide plate⑨of machine head. Connect the tabletop and stand with bolts⑦.
- (6) Install oil pan ③ on the transoms of stand with screws ④.

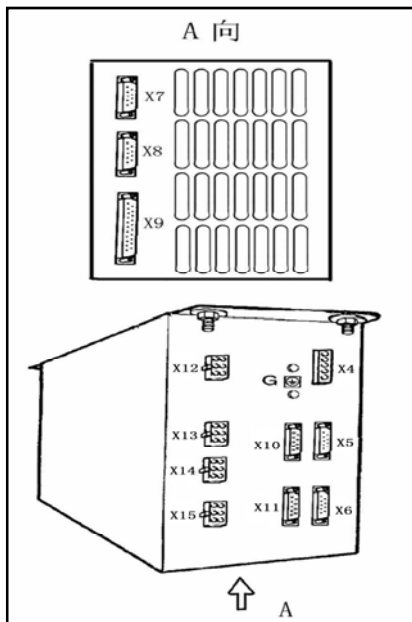


3-5.Connection of electric cables

(1) Connection diagram

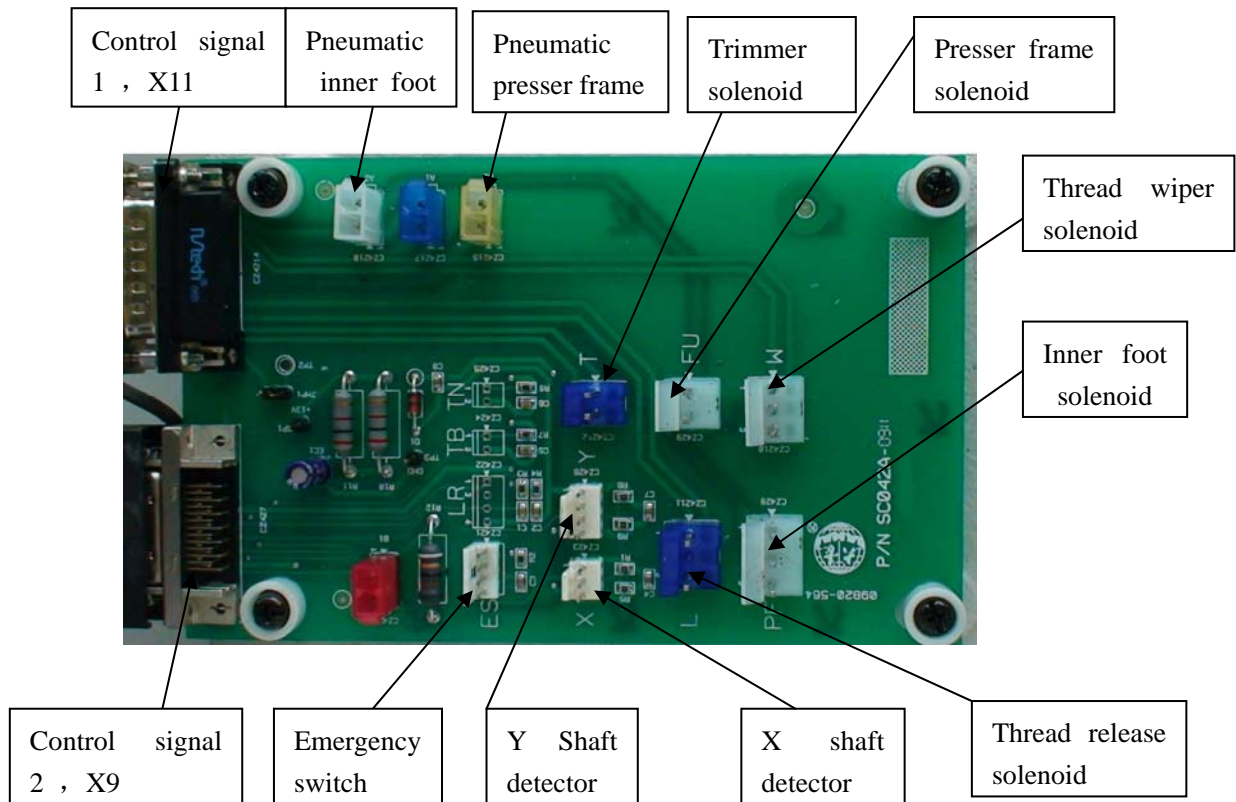


(2) Back of control box and sockets diagram.



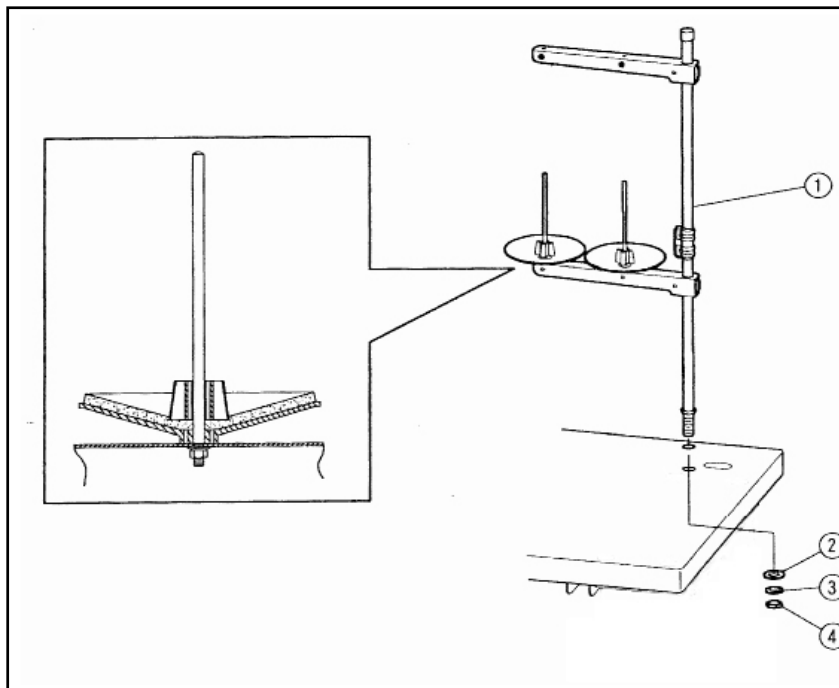
SOCKET NAME	FOR CONNECTING TO
X4	Spindle motor power
X5	Spindle motor signal
X6	RS-232C(Optional)
X7	Operation panel
X8	Foot switch pedal
X9	Solenoid output
X10	RS-232C(Optional)
X11	Control signal 1
X12	Extension I/O
X13	Control signal 2
X14	Y stepping motor
X15	X Stepping motor
G	Ground wire

(3) Circuit board diagram.



3-6. Installation of spool stand

- (1) Assemble the stand parts (packed in accessory box) as following figure shows.
- (2) Fit spool stand ① into the hole on the upper right corner of table top.
- (3) Fix the thread stand①firmly from the rear side of the table by tightening the nut④and the washers②, ③.



4. OILING

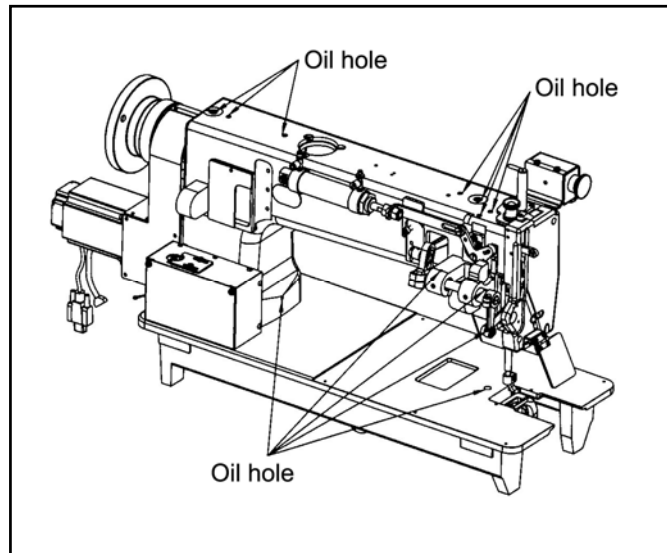


CAUTION

- ★ Turn of power witch before oiling.
- ★ Oil the machine sufficiently before first operation of a brand new machine or after long time stop.

NOTE : Please use high quality white SF machining oil:

Pour some oil into red marked oil holes as the figure on the right shows.



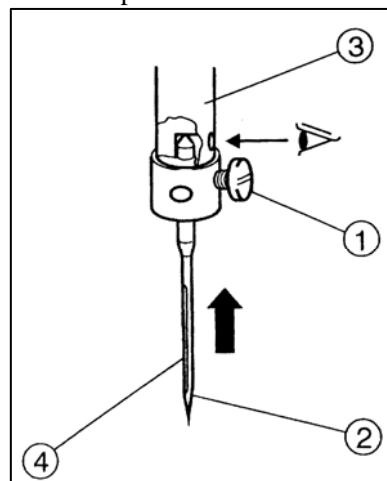
5. PROPER OPERATION

5-1.Installation of the needle

Caution

- ★Please be sure to turn the power switch OFF before installing or replacing the needle.
- ★Please pay attention for the fingers not to be wounded by the needlepoint.

- (1) Loosen the needle set screw① and then insert a new needle② till the needle head reach the end of the hole of the needle bar③.
- (2) Make the needle groove④face to the front and fasten the setting screw①then.

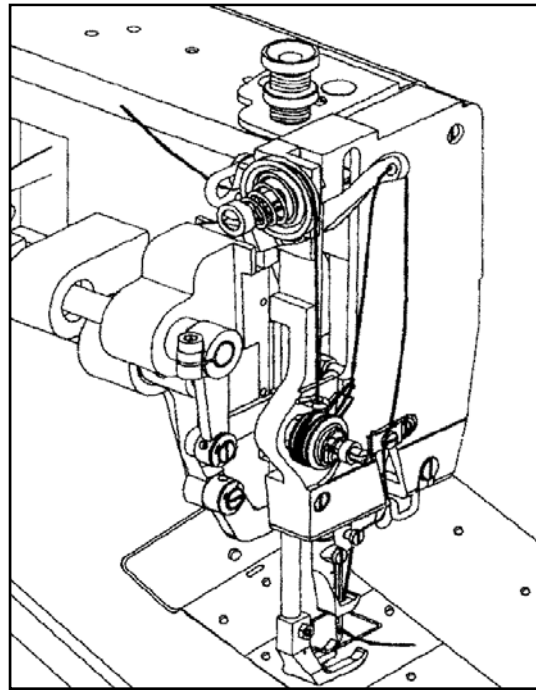


5-2.Threading the upper thread



- ★Please be sure to turn the power switch OFF before threading the upper thread.

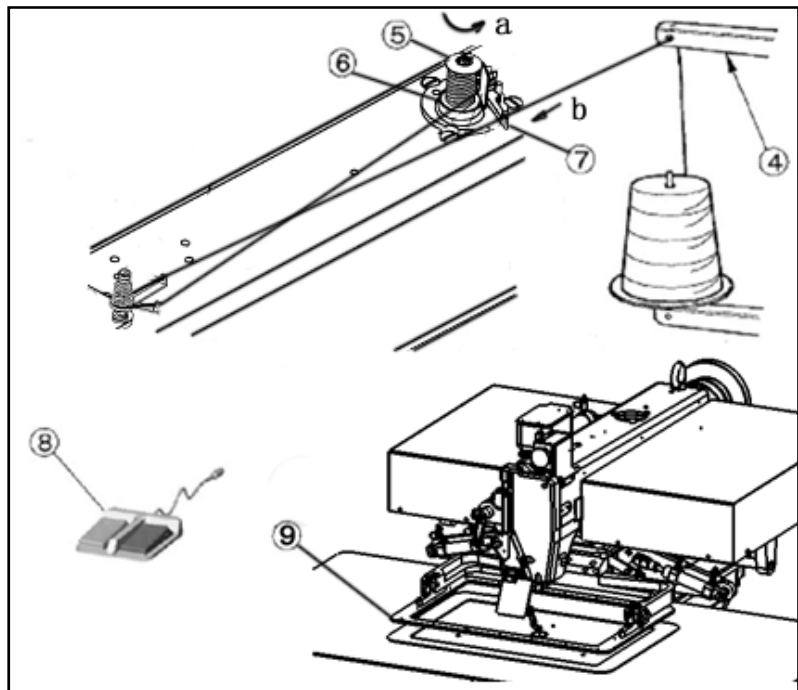
- ★ Please refer to the figure on the right and thread the upper thread as the figure shows.



5-3.Winding the bobbin thread

- ★Please be sure to pull the upper thread out of the needle before winding the bobbin thread.

- (1) Turn the power switch ON.
- (2) Entering winding model with referring to the Instruction manual of control system.
- (3) Lead thread through thread stand④ and thread guard as shown on the below figure and then wind the thread to the empty bobbin⑤in the arrow mark “a” direction couple times and insert the bobbin ⑤into the bobbin winder⑥.
- (4) Push the winder lever⑦in the arrow mark “b” direction.
- (5) Step on the gray color start foot switch⑧, the sewing machine runs and start the winding.
- (6) When the bobbin thread is full, the winder lever⑥ will return to the original position automaticly and the winding will stop.
- (7) Step on the gray foot switch to stop the sewing machine.



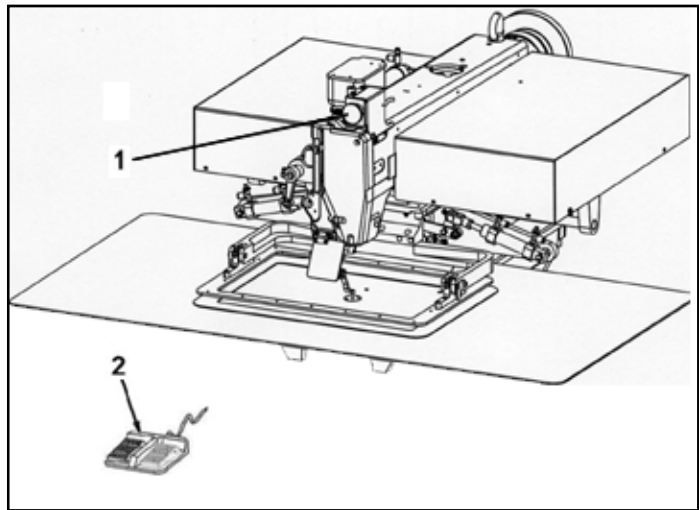
6. PROPER SEWING

6-1.Operation of the emergency switch

If an incident such as thread breakage, needle breakage and any other accident happen during the sewing operation, please hit the emergency switch immediately. The sewing machine will be stopped instantly.

Caution

- ★ Before start the sewing operation, please check the location of the emergency switch and keep in mind the function and operation method of it.
- ★ Please keep hands and face away from the needle during sewing operation.
 - (1) Press the Emergency switch①, All operations will stop.
 - (2) Remove the cause of the abnormality.
 - (3) To release the swith, turn the Emergency switch clockwise.
 - (4) To continue sewing, step on the foot switch pedal②(left).
 - (5) To stop sewing, please refer to the Instruction manual of control system.



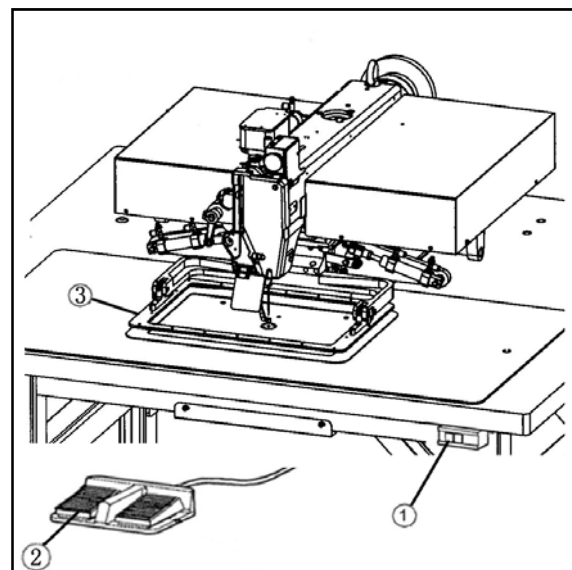
6-2.The sewing operation



Caution

- ★ Do not operate the sewing machine if without the safety guards(Eye guard: belt cover, Link cover, Finger guard etc.).
- ★ Please do not put any unnecessary articles on the tabletop during sewing operation.
- ★ Please keep hands and the face away from the needle.

- (1) Turn the power switch①ON. Touch screen will shows Sewing Data Setting interface.
Attention: On sewing model, sewing speed is adjustable within limit as shown on Sewing data setting interface.
- (2) When the start switch②(left) is pressed, the presser frame③will go down and sewing will start .

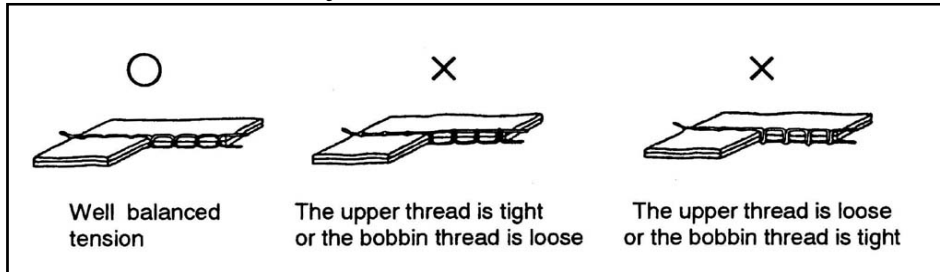


6-3.Adjustment of the thread tension

The thread tension between the upper and bottom thread should be balanced.

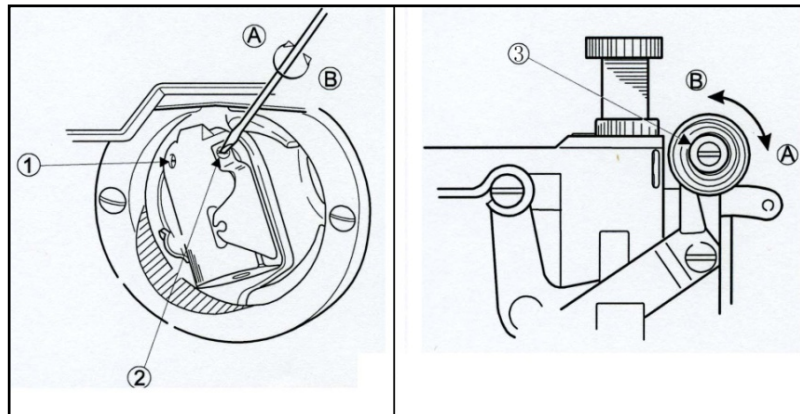
When the upper thread tension is well balanced with the bobbin thread tension, both threads are interlocked along the centerline of fabric layers as shown on the below figures.

Note: Thread tension should be adjusted to fit different fabrics.



(1) Adjusting of bobbin thread tension.

Loosen screw ① adjust bobbin thread tension with thread tension adjusting screw ②. Turn the screw clockwise to increase the tension, turn the screw counterclockwise to decrease thread tension.



(2) Adjusting of upper thread tension.

Adjust the upper thread tension according to the bobbin thread tension. Turn the thread tension adjusting nut ③ clockwise to increase the thread tension, or turn it counterclockwise to decrease the tension.

6-4.Removing and Inserting the bobbin

- (1) Removing: Open the shuttle race cap and the bobbin case, then take out the bobbin.
- (2) Installation: Install the bobbin in the bobbin case, make sure the bobbin will rotate counterclockwise and then pull the end of thread out.

7. ADJUSTMENT OF SEWING MACHINE



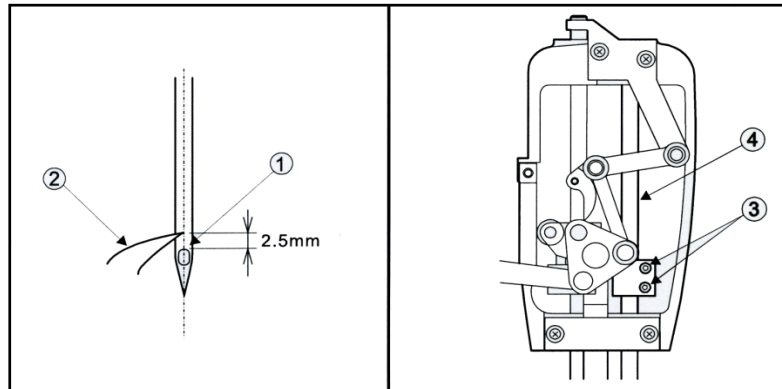
Caution

- ★ Power off before adjustment.
- ★ Keep foot away from operation pedal in the case of must have power on during adjustment,.
- ★ Mind your hand from needle and hook point.
- ★ All safety guards(Eye guard: belt cover, Link cover, Finger guard etc.) must be reinstalled properly after adjustment.

7-1.Adjusting of needle bar height

When needle bar touch shuttle hook point②, the distance between top of the needle hole and shuttle hook point should be about 2.5mm. To adjust height of needle bar.

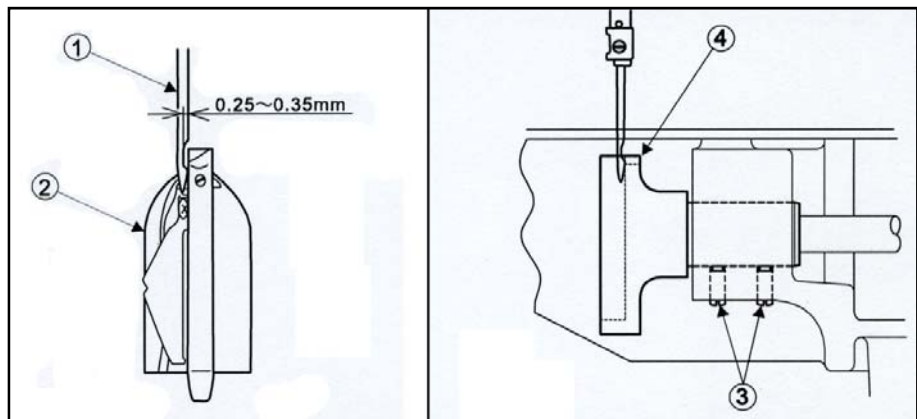
- (1) Loosen screw③.
- (2) Adjusting the height of needle bar ④.
- (3) Tighten screw ③.



7-2.Adjusting of distance between needle and shuttle hook point

The correct distance between needle and hook point is about 0.25-0.35mm.

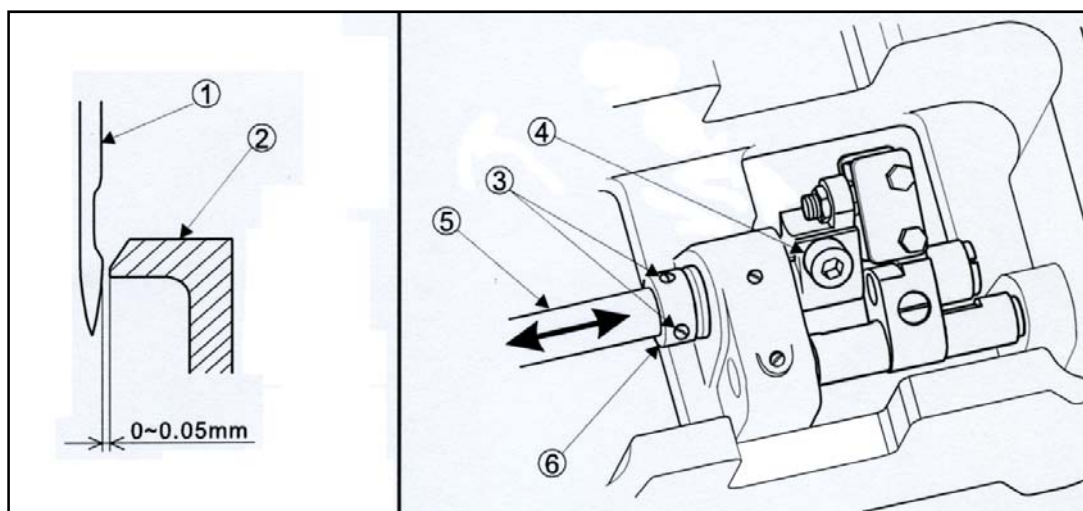
- (1) Loosen screw ③.
- (2) Move shuttle race ④ to along its shaft to correct position.
- (3) Tighten screw ③.



7-3.Adjustment of the clearance between the hook driver and the needle

Proper clearance between the needle①and hook driver②is 0-0.05mm(with standard needle DY×3 26#).

- (1) Loosen screw③and④.
- (2) Move hook drive shaft⑤to a proper position.
- (3) Tighten screw③and④.



7-4.Adjustment of the presser foot

[NOTE]The presser foot is a very important part for performing fine stitches.

It moves simultaneously with the needle. When the needle sticks into or pulls out the sewing material, the inner foot must press down on sewing material and stabilize the needle penetrating area to prevent the skip stitch or the over penetration happening. Please adjust the presser foot properly to the sewing materials with the following instructions.

7-4-1.Adjustment of the presser foot position

[NOTE]Please always adjust the presser foot position when the thickness of the sewing material is changed.

- (1) Turn the power switch OFF.
- (2) Remove the face plate and cover.
- (3) Turn hand wheel to move Crank ① to left end, loosen set screw ④ to disconnect air cylinder link rod ③ from knee lifter lever②.
- (4) Pull up presser bar ⑤ and presser bar clamp ⑥, put a block with 12.7mm height as following figure shows as positioning.
- (5) Fix the drive shaft ⑦, tighten set screw ⑧, reinstall the knee lifter lever ②and other parts mentioned in above item (3) to their original positions.
- (6) Loosen the presser foot bar setscrew⑨and move the presser foot⑩ up and down to adjust the height of presser foot to proper position.

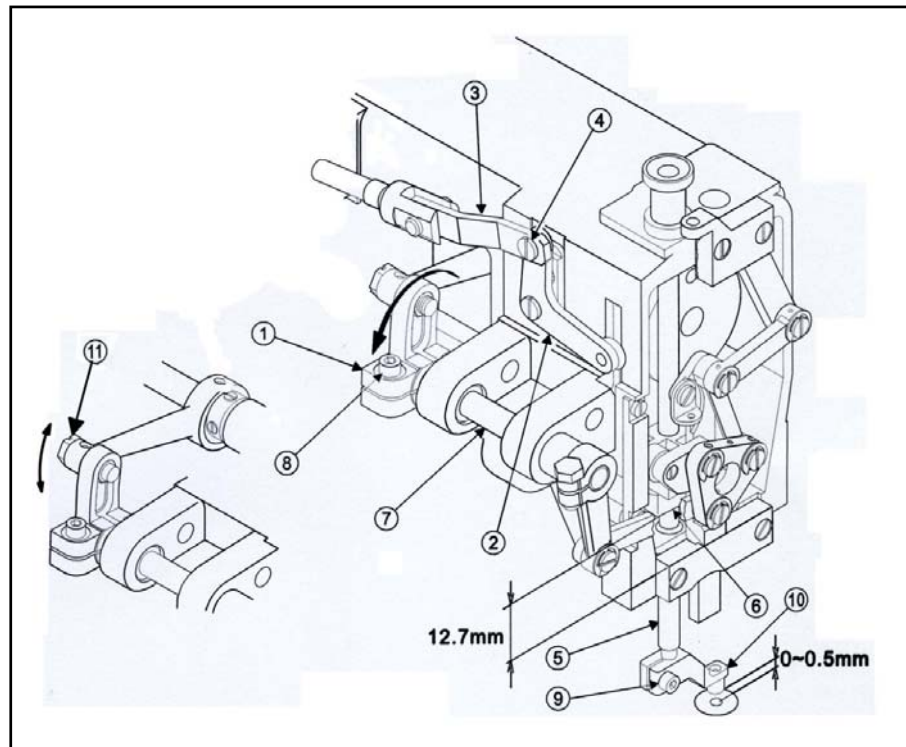
[NOTE]The lower position of the presser foot, the more effective for preventing skip stitches. However, if the presser foot press the sewing material too hard, the movement of the presser foot mechanism will make noise, the presser foot will stays longer holding sewing material, the upper thread tension becomes loose and maybe the sewing pattern will out of shape. So the height of presser foot must be adjusted to proper position according to different thickness of fabrics.

If the thickness of fabric changes frequently, better to adjust the height of presser foot in easiest way:

Loosen screw ⑨
and adjust the
height of the inner
presser foot⑩.

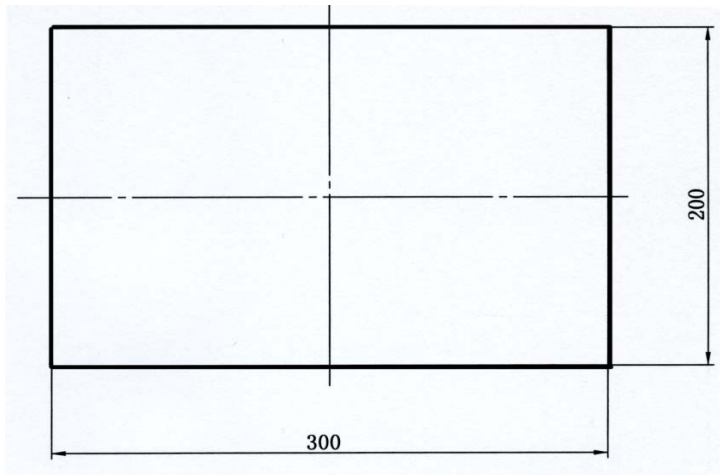
7-4-2.Adjustment of the presser foot lift during the sewing

Loosen bolt ⑪,
move it up or down to
adjust the presser foot
lift to a proper
position and tight bolt
⑪ then.



7-5.Adjustment of the mechanical home position

[NOTE]The mechanical home position is set at the center of the sewing area as default.



Note: The second mechanical home position can be set with referring to Operation Manual of control system.

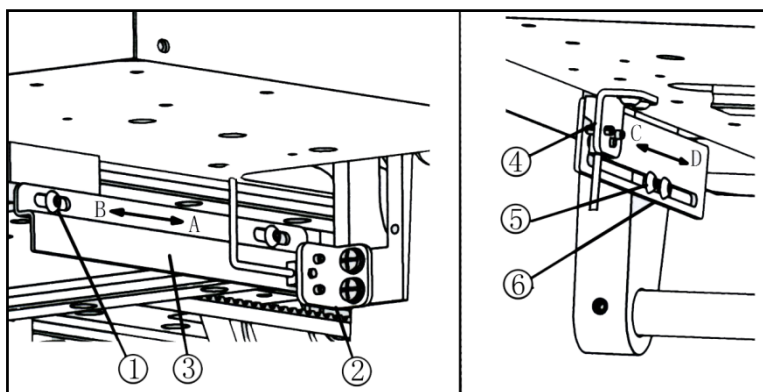
7-5-1.Shifting the mechanical home position along X direction

- (1) Loosen the set screws①(2 pieces) of X-detector plate ③, Move the detector plate ③ to the right to move the mechanical home position towards B or moved the plate to the left to move mechanical home position towards A.
- (2) Tighten the set screws①securely after adjustment.

7-5-2.Shifting the mechanical home position along Y direction

- (1) Loosen the setscrew⑤of Y-detector plate ⑥.
- (2) Move the detector plate ⑥ forward to move the mechanical home position towards C or moved the plate to backward to move mechanical home position towards D.
- (3) Tighten the screw⑤securely after adjustment.

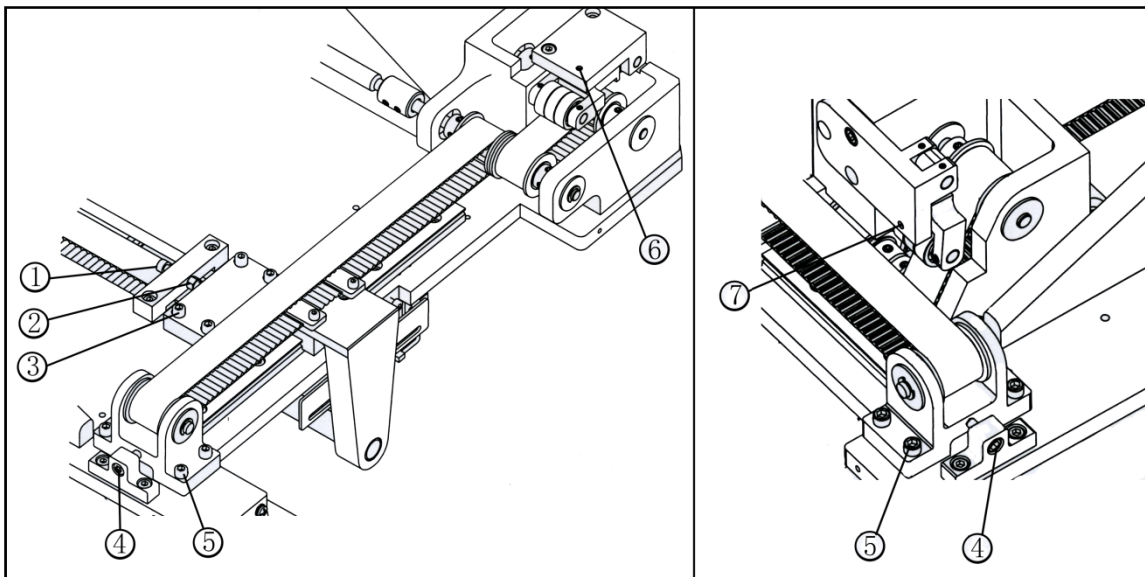
[NOTE] When the original mechanical home position is shifted. Please check the clearance between the X detector plate and the X detector. This clearance should be set within the range of 1.0—1.5 mm.



7-6.Adjustment of X and Y timing belt tension

- (1) Remove the Left cover (big) and Right cover (big) from machine head.
- (2) Loosen nut② and set screws of pulley base③.
- (3) Tighten or loosen screw ① to increase or decrease tension of X Timing belt. Tighten or loosen screw ⑦ to adjust tension of X Timing belt (short).
- (4) Loosen screw⑤, (Adjust by both left and right side independently)tighten screw ④ will increase tension of Y timing belt, tighten screw⑥ will increase tension of Y timing belt (short).
- (5) Make sure all set screws and nuts have been fully tightened after the adjustment.

Note: Too weak tension of the timing belts will cause inaccurate positioning of needle and bad feeding, too strong tension of timing belts will reduce the longevity of the belts.



8. MAINTENANCE

Caution

- ★Please be sure to turn the power switch OFF before clean up the sewing machine.
- ★Before or after the sewing operation, please clean up the sewing machine and oil the marked oil holes with proper volume of suitable sewing machine oil.

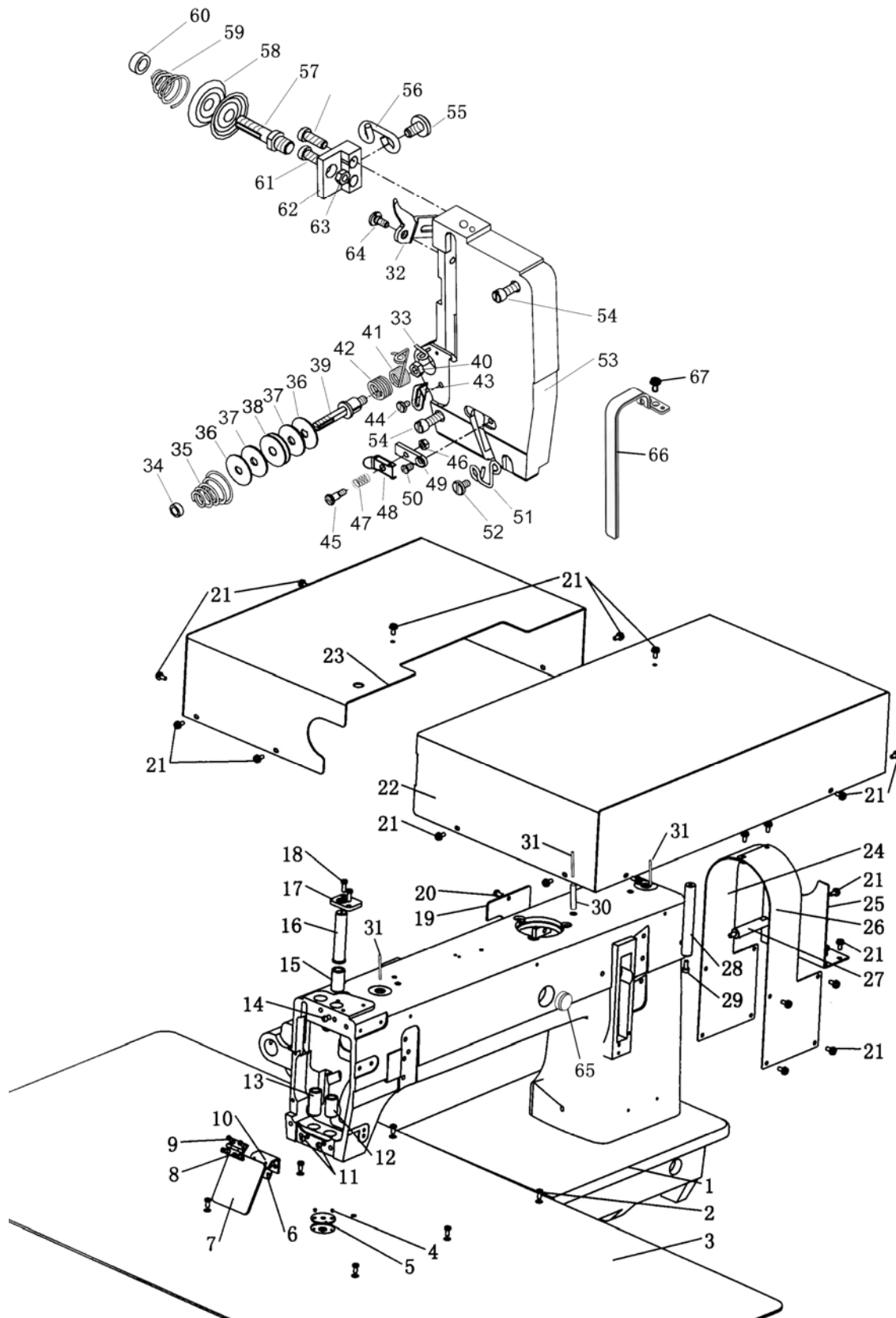
8-1.Daily maintenance.

- (1) Turn OFF the main power switch.
- (2) Remove the dust and thread waste sticking around the threading parts or the shuttle hook area.
- (3) Oil the marked oil holes with proper volume of suitable sewing machine oil.

8-2.Drain of waste oil

Check oil tank and drain the waste oil regularly.

A.ARM BED AND ITS ACCESSORIES



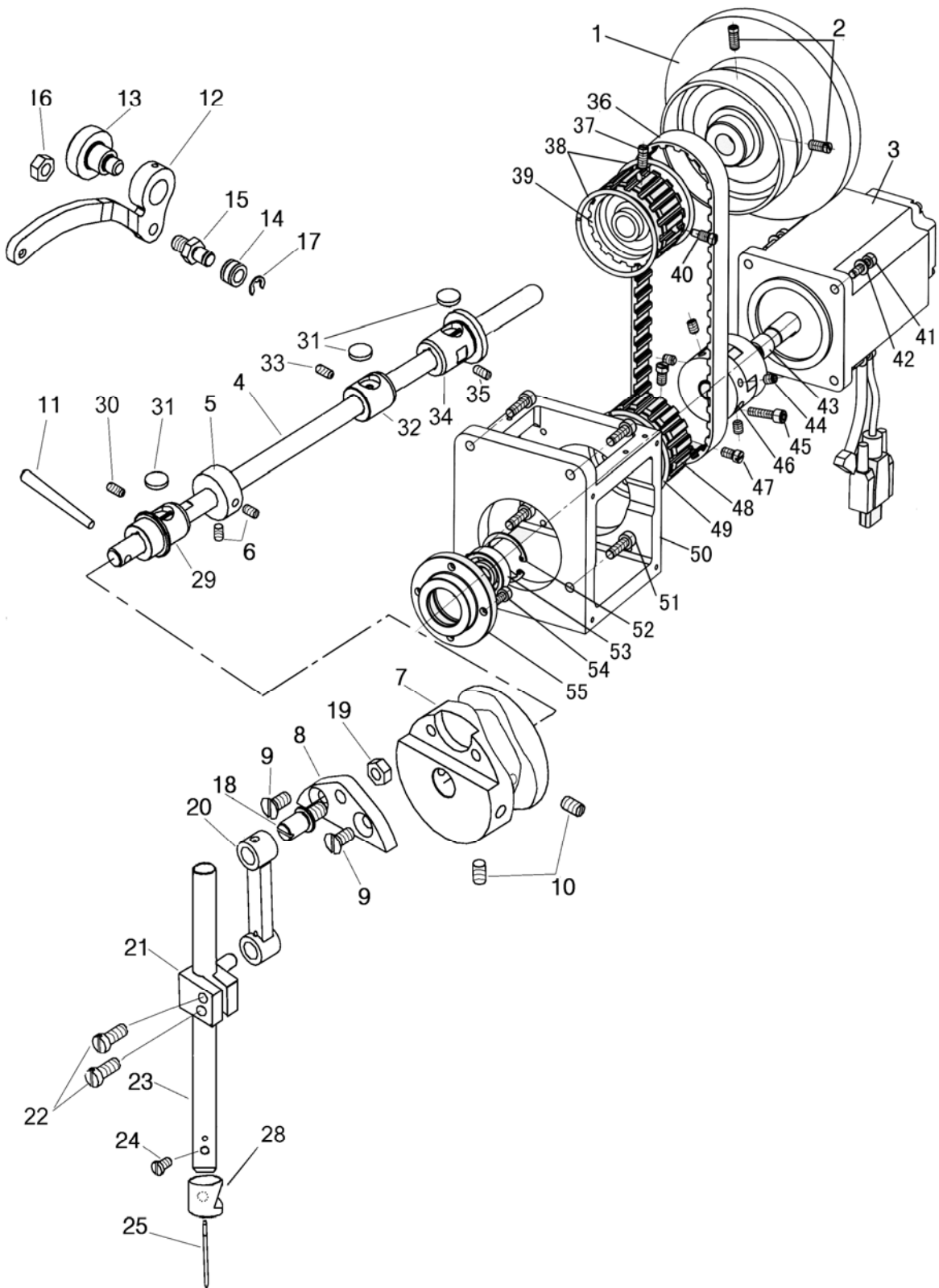
A.ARM BED AND ITS ACCESSORIES

Fig. No.	Part No.	Description	Pcs.	Remarks
A01	HBB3252072	Arm and bed	1	
A02	H6623C8001	Screw	6	
A03	HBB3265081	Big slide plate	1	
A04	H6675F8001	Screw	2	
A05	HBB3266081	Needle plate	1	
A06	H6675B8001	Retainer plate	1	
A07	HBB3274081	Guide plate	1	
A08	H6671B8001	Hinge	1	
A09	HA104G0654	Screw	4	
A10	HM015B8001	Guide plate base	1	
A11	H9010B8001	Screw	2	SM1/4 (40) × 2.5
A12	H9011B8001	Needle bar bushing	1	
A13	H7218B8001	Presser bar bushing	1	
A14	H7239D8001	Screw	1	SM1/4 (40) × 3.5
A15	H9009B8001	Needle bar bushing	1	
A16	H9017B8001	Needle bar guard	1	
A17	H9018B8001	Needle bar guard plate	1	
A18	HA111G0683	Screw	2	
A19	HBB3257081	Arm side cover	1	
A20	HA300B2170	Screw	1	
A21	HZ11040100	Screw	29	M4 × 10
A22	HBB3271081	Right cover (big)	1	
A23	HBB3268081	Left cover (big)	1	
A24	HBB3262081	Belt guide (L)	1	
A25	HBB3276081	Belt guide (M)	1	
A26	HBB3263081	Belt guide (R)	1	
A27	HBB3275081	Stud screw for belt guide	1	
A28	HBB3260081	Supporting rod for right cover	1	
A29	H415040100	Screw	1	M4 × 10
A30	H7215B8001	Oil pipe	1	
A31	H7216B8001	Oil wick	3	
A32	H7244B8001	Tension releasing disc	1	
A33	H7246B8001	Thread guide	1	
A34	HA115B0702	Tension nut	1	
A35	H7241B8001	Tension spring	1	
A36	H7248B8001	Washer	2	
A37	H7249B8001	Felt	2	
A38	H7250B8001	Damping plate	1	
A39	H7251B8001	Tension screw stud	1	
A40	HA710N0683	Temsopm nut	1	SM15/64 (28)
A41	H7253B8001	Thread take-up spring	1	
A42	H7254B8001	Spring	1	
A43	H7255B8001	Thread take-up spring guide plate	1	

A.ARM BED AND ITS ACCESSORIES

Fig. No.	Part No.	Description	Pcs.	Remarks
A44	H3410C301K	Screw	1	SM9/64(40) × 6.5
A45	H7257B8001	Screw	1	
A46	H7258B8001	Nut	1	SM1/8(44)
A47	H7259B8001	Tension spring	1	
A48	H7260B8001	Tension disc	1	
A49	H7261B8001	Thread tension regulator complete base	1	
A50	HA7311CC06	Screw	1	SM9/64(40) × 6
A51	H7262B8001	Thread guide	1	
A52	H3410C301K	Screw	1	
A53	H9016B8001	Face plate	1	
A54	H7238B8001	Screw	2	SM15/64(28) × 22
A55	H3410C301K	Screw	1	SM11/64(40) × 9
A56	H7240B8001	Thread guide	1	
A57	H7242B8001	Tension screw stud	1	
A58	HA310B0705	Tension disc	1	
A59	H7241B8001	Tension spring	1	
A60	HA115B0702	Nut	1	
A61	HA111G0683	Screw	2	SM11/64(40) × 12
A62	H7243B8001	Thread tension regulator complete base	1	
A63	H2010J0066	Tension nut	1	SM9/32(28)
A64	H7245B8001	Screw	1	SM3/16(28)
A65	HA300B2100	Rubber plug	1	
A66	HBB3277081	Thread take-up cover	1	
A67	HA300B0170	Screw	1	SM11/64(40)

B.NEEDLE BAR AND THREAD TAKE-UP MECHANISM



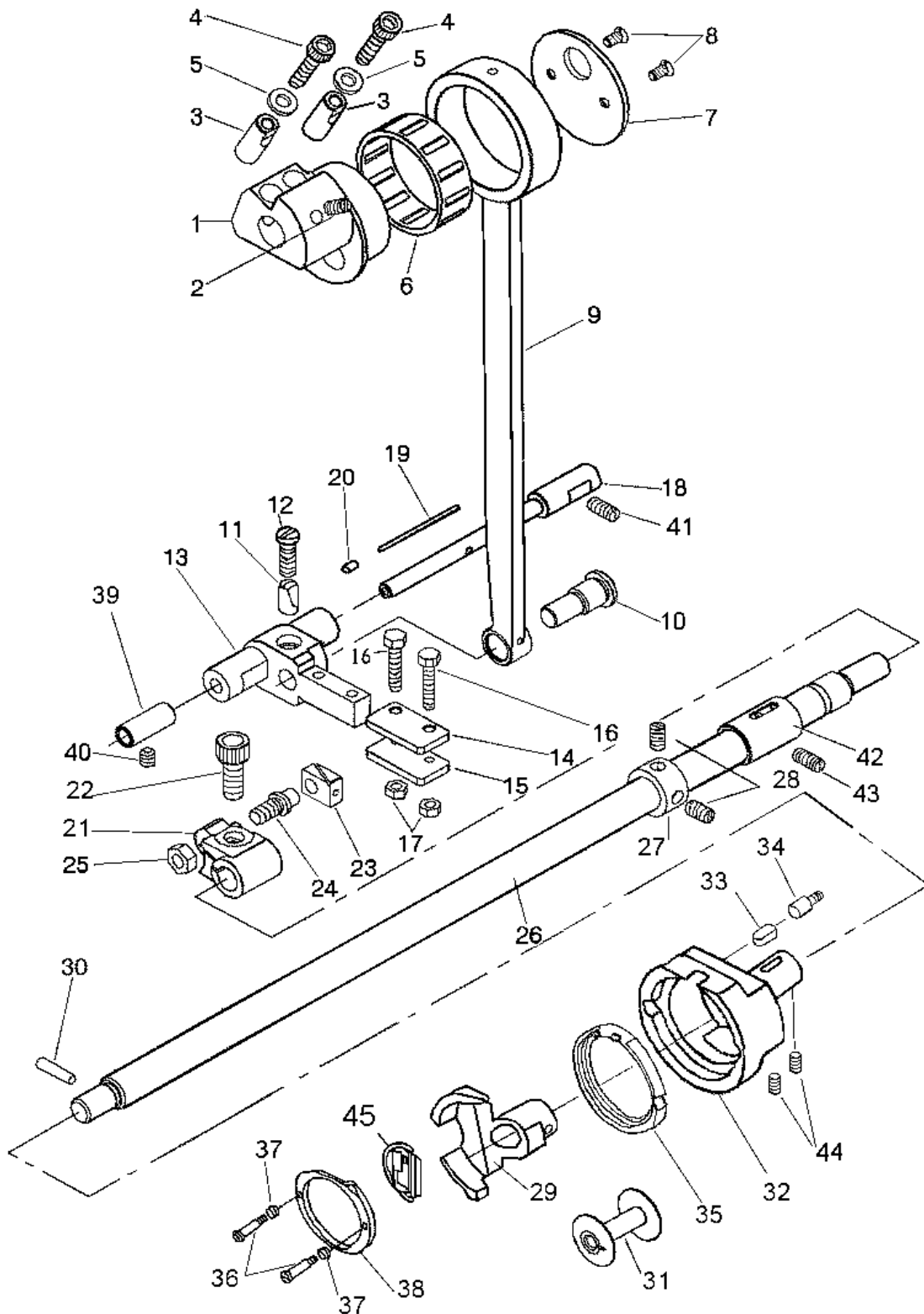
B.NEEDLE BAR AND THREAD TAKE-UP MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
B01	H2000C2040	Pulley	1	
B02	HA110D0672	Screw	1	
B03	HBC3258081	Servomotor	1	
B04	HBC3252081	Arm shaft	1	
B05	H9004C8001	Collar	1	
B06	HA105D0662	Screw	2	SM1/4 (40) × 6
B07	H7209C8001	Thread take-up cam	1	
B08	H7210C8001	Screw	1	
B09	H403060120	Screw	2	GB/T68 M6 × 12
B10	H4933K8001	Screw	2	SM1/4 (40) × 10
B11	H602040450	Pin	1	GB/T117 4 × 45
B12	H7211C8001	Thread take-up lever	1	
B13	H7212C8001	Screw	1	
B14	H7213C8001	Roller	1	
B15	H7214C8001	Roller pin	1	
B16	H2010J0066	Nut	1	SM9/32 (28)
B17	H007013050	E-type ring	1	GB/T896 5
B18	H7215C8001	Scrw	1	
B19	H2010J0066	Nut	1	SM9/32 (28)
B20	H7216C8001	Needle bar connecting link	1	
B21	H9006C8001	Needle bar connecting stud	1	
B22	HA800F2020	Screw	2	SM15/64 (28) × 13.5
B23	H9007C8001	Needle bar	1	
B24	HA700F2100	Screw	1	SM11/64 (40) × 7
B25	H7220C8001	Needle	1	DY*3 26#
B28	H9010C8001	Thread guide for needle bar	1	
B29	H7213B8001	Bushing	1	
B30	H2405D0664	Screw	1	
B31	H7214B8001	Felt	3	
B32	H7212B8001	Bushing	1	
B33	H2405D0664	Screw	1	
B34	H7211B8001	Bushing	1	
B35	H2405D0664	Screw	1	
B36	HBC3253081	Timing belt	1	
B37	HA110D0672	Screw	1	
B38	H3205C0661	Stop ring	2	
B39	H3205C1021	Timing belt pulley	1	
B40	HA100F2130	Screw	1	
B41	H415050200	Screw	4	M5 × 20
B42	H005001050	Washer	4	
B43	HBC3254081	Shaft	1	
B44	H428060080	Screw	4	
B45	H415050200	Screw	1	M5 × 20

B.NEEDLE BAR AND THREAD TAKE-UP MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
B46	HK42C47101	Shaft connector Assy.	1	
B47	HA104F0654	Screw	2	
B48	H3207C0671	Timing belt pulley (a)	1	
B49	H3205C0661	Stop ring	1	
B50	HBC3255081	Servomotor base	1	
B51	H415060200	Screw	4	M6×20
B52	H007007320	Stop ring	1	
B53	HB6296E081	Bearing	1	6201DU $\phi 12 \times \phi 32 \times 10$
B54	H415050120	Screw	4	M5×12
B55	HBC3257081	Bearing pedestal	1	

C.LOWER SHAFT MECHANISM



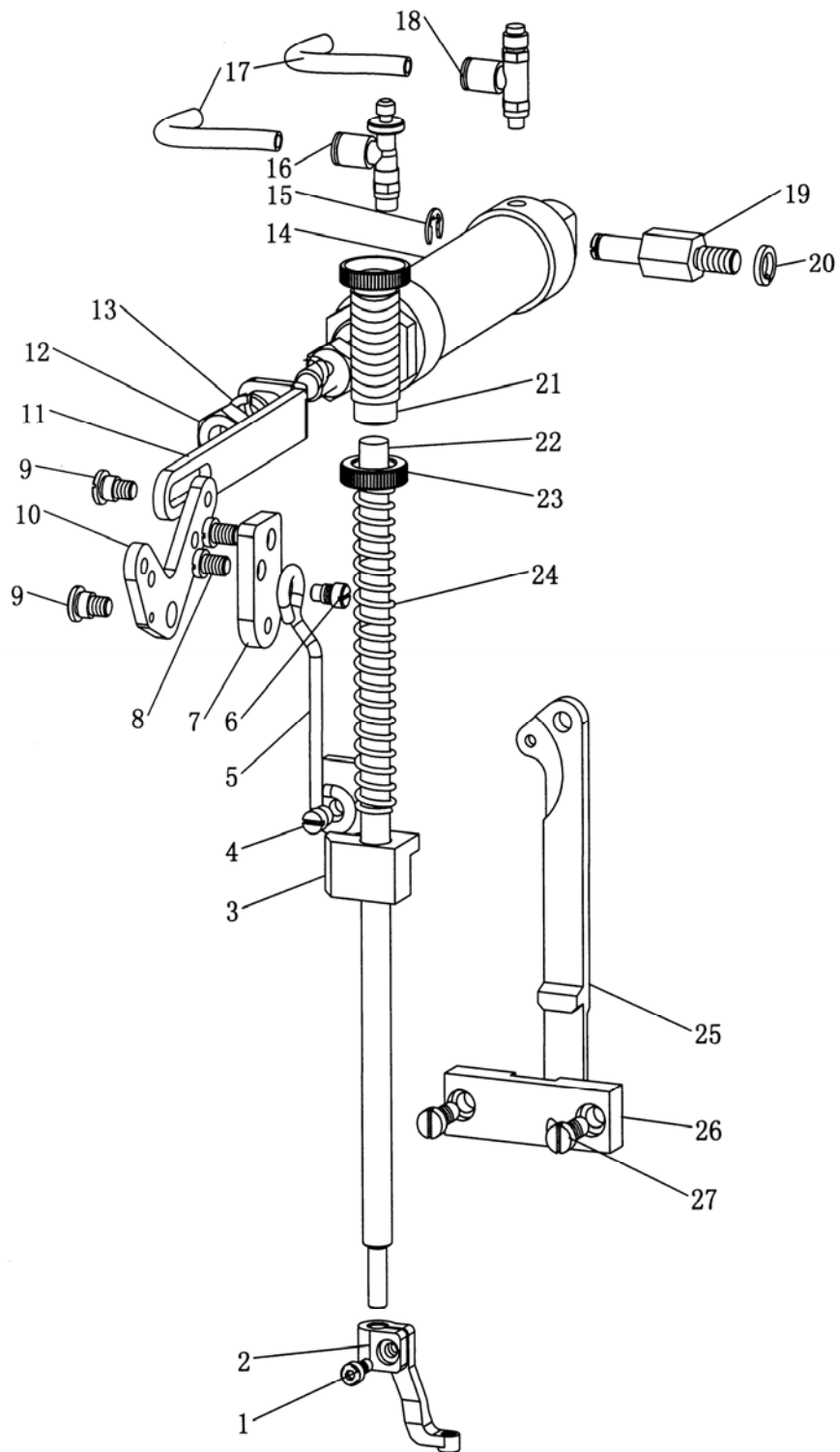
C.LOWER SHAFT MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
C01	H7204D8001	Eccentric	1	
C02	H7205D8001	Set screw	1	SM15/64 (28) × 12
C03	H7206D8001	Pin	2	
C04	H415060250	Screw	2	GB/T70.1 M6 × 25
C05	H4728H8001	Washer	2	
C06	H7237D8001	Bearing	1	K43 × 48 × 17 (NTN)
C07	H7207D8001	Eccentric cover	1	
C08	H2000B2050	Screw	2	SM11/64 (40) × 9
C09	H7208D8001	Crank connecting rod	1	
C10	H7209D8001	Crank connecting rod pin	1	
C11	H7210D8001	Pin	1	
C12	H7211D8001	Screw	1	SM3/16 (32) × 18
C13	H7213D8001	Shuttle shaft	1	
C14	H7214D8001	Plate	1	
C15	H7215D8001	Plate	1	
C16	H7216D8001	Screw	2	
C17	H2000M0120	Nut	2	SM11/64 (40)
C18	H7218D8001	Inside shaft	1	
C19	H7219D8001	Oil wick	1	
C20	H7220D8001	Rivet	1	
C21	H7222D8001	Lower shaft crank	1	
C22	H415080200	Screw	1	GB/T70.1 M8 × 20
C23	H7223D8001	Shuttle shaft slide block	1	
C24	H7224D8001	Screw	1	
C25	H2010J0066	Nut	1	SM9/32 (28)
C26	H0305D8001	Lower shaft	1	
C27	HA108G0661	Collar	1	
C28	H7239D8001	Set screw	2	SM1/4 (40) × 3.5
C29	H0306D8001	Shuttle driver	1	
C30	H602040220	Pin	1	GB/T117 4 × 22
C31	H7228D8001	Bobbin	1	
C32	H0307D8001	Shuttle hook base	1	
C33	H0308D8001	Felt	1	
C34	H0309D8001	Screw	1	SM15/64 (28)
C35	H0310D8001	Shuttle race body	1	
C36	H7231D8001	Screw	2	SM3/16 (28)
C37	H7232D8001	Spring	2	
C38	H0311D8001	Shuttle race cap	1	
C39	H7234B8001	Bushing	1	
C40	HA100C2020	Set screw	1	SM15/64 (28) × 10
C41	HA3411D308	Set screw	1	SM15/64 (28) × 7
C42	H7229B8001	Bushing	1	
C43	HA100C2020	Set screw	1	SM15/64 (28) × 10

C.LOWER SHAFT MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
C44	H2405D0664	Set screw	2	SM15/64(28) × 14
C45	H7240D7101	Shuttle hook	1	KSP-204N

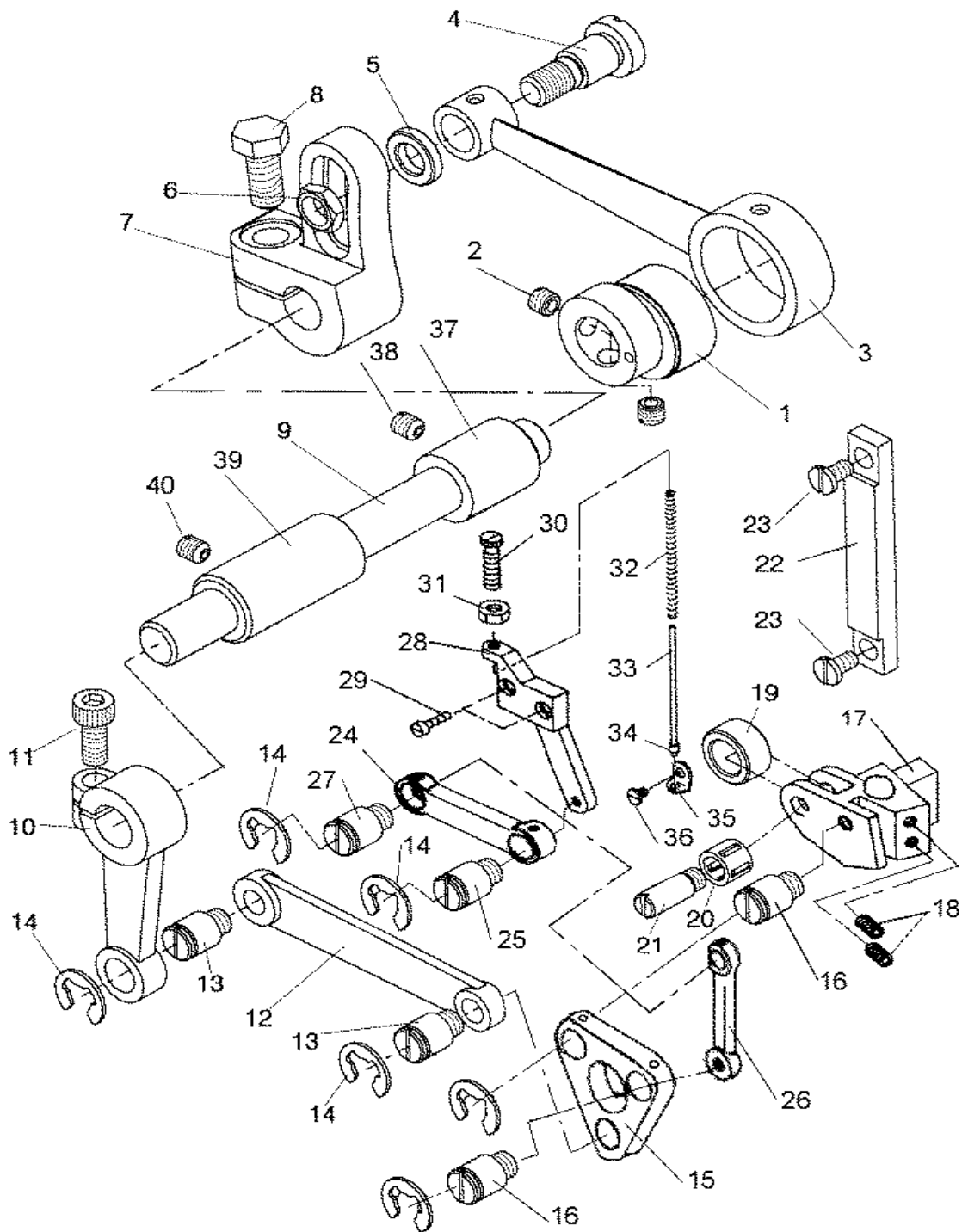
D.CENTER PRESSER FOOT MECHANISM



D.CENTER PRESSER FOOT MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
D01	H415040100	Screw	1	M4×10
D02	HBE3251081	Inner foot	1	
D03	H7220F8001	Presser bar guide bracket	1	
D04	H7222F8001	Screw	1	
D05	H7221F8001	Connecting rod	1	
D06	H7207I8001	Screw	1	
D07	H7206I8001	Knee lifter lever base	1	
D08	HA300J2280	Screw	2	
D09	H7205I8001	Screw	2	
D10	H7204I8001	Knee lifter lever	1	
D11	H8906I8001	Air cylinder link	1	
D12		Nut	1	GB/T 6173 M10×1.25
D13	H005008100	Spring washer	1	
D14	H4910N8001	Air cylinder	1	
D15	H007013060	Stop ring	1	
D16	H4922N8001	Valve	1	φ6-1/8"
D17	H8912I8001	Air pipe	2	φ6×1600
D18	H4921N8001	Air connector	1	φ6-1/8"
D19	H8907I8001	Rock pin	1	
D20	H005008080	Washer	1	
D21	H7209F8001	Thumb screw	1	
D22	HBE3254081	Presser bar	1	
D23	H7210F8001	Nut	1	
D24	H7208F8001	Presser bar spring	1	
D25	HBE3252081	Push rod	1	
D26	HBE3253081	Presser plate	1	
D27	HA800F2020	Screw	2	

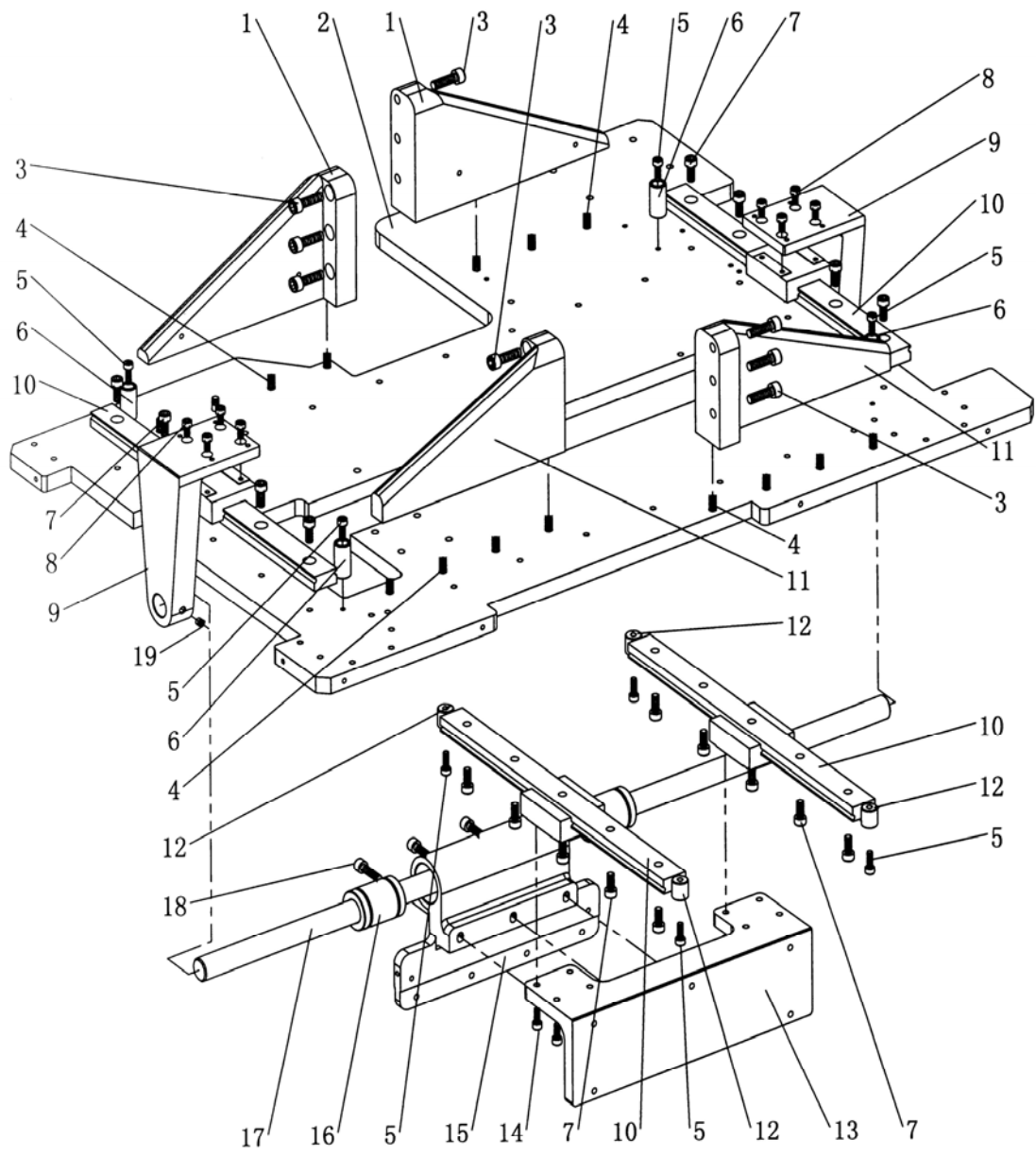
E.UPPER FEED LIFTING ROCK SHAFT MECHANISM



E.UPPER FEED LIFTING ROCK SHAFT MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
E01	H7204G8001	Presser foot lifting eccentric	1	
E02	HA307C0066	Screw	2	SM1/4(40)×6
E03	H7205G8001	Eccentric wheel rod	1	
E04	H7206G8001	Screw	1	
E05	H7207G8001	Washer	1	
E06	H7208G8001	Nut	1	SM11/32(28)
E07	H7209G8001	Adjusting crank	1	
E08	H7210G8001	Screw	1	SM5/16(18)×18
E09	H7211G8001	Presser foot lifting shaft	1	
E10	H7212G8001	Presser foot lifting shaft crank	1	
E11	H415060140	Screw	1	M6×14
E12	H7213G8001	Presser foot lifting connecting link	1	
E13	H7214G8001	Shaft bolt	2	
E14	H007013080	E-type ring	4	GB/T896 8
E15	H9004G8001	Presser foot lifting lever	1	
E16	H7214G8001	Shaft bolt	2	
E17	H9005G8001	Presser foot lifting lever base	1	
E18	H4933K8001	Screw	2	SM1/4(40)×10
E19	H7217G8001	Roller	1	
E20	H7221G8001	Bearing	1	ISO K7×10×8T2
E21	H7218G8001	Screw	1	SM15/64(28)×5
E22	H7219G8001	Roller base plate	1	
E23	HA700B2060	Screw	2	SM3/16(32)×8
E24	H9006G8001	Presser feed crank link	1	
E25	H9007G8001	Shaft bolt	1	
E26	H9008G8001	Presser feed crank link	1	
E27	H7214G8001	Screw	1	
E28	H9009G8001	Lifting presser bracket for spring	1	
E29	HA800F2020	Screw	2	SM15/64(28)×13.5
E30	H2010J0065	Screw	1	
E31	H2010J0066	Nut	1	
E32	H2000J2050	Lifting presser spring	1	
E33	H9011G8001	Presser spring guide	1	
E34	H9012G8001	Presser spring guide block	1	
E35	H9013G8001	Lifting spring guide plate	1	
E36	H9014G8001	Screw	1	
E37	H7221B8001	Bushing	1	
E38	HA3411D308	Screw	1	SM15/64(28)×7
E39	H7222B8001	Bushing	1	
E40	HA3411D308	Screw	1	SM15/64(28)×7

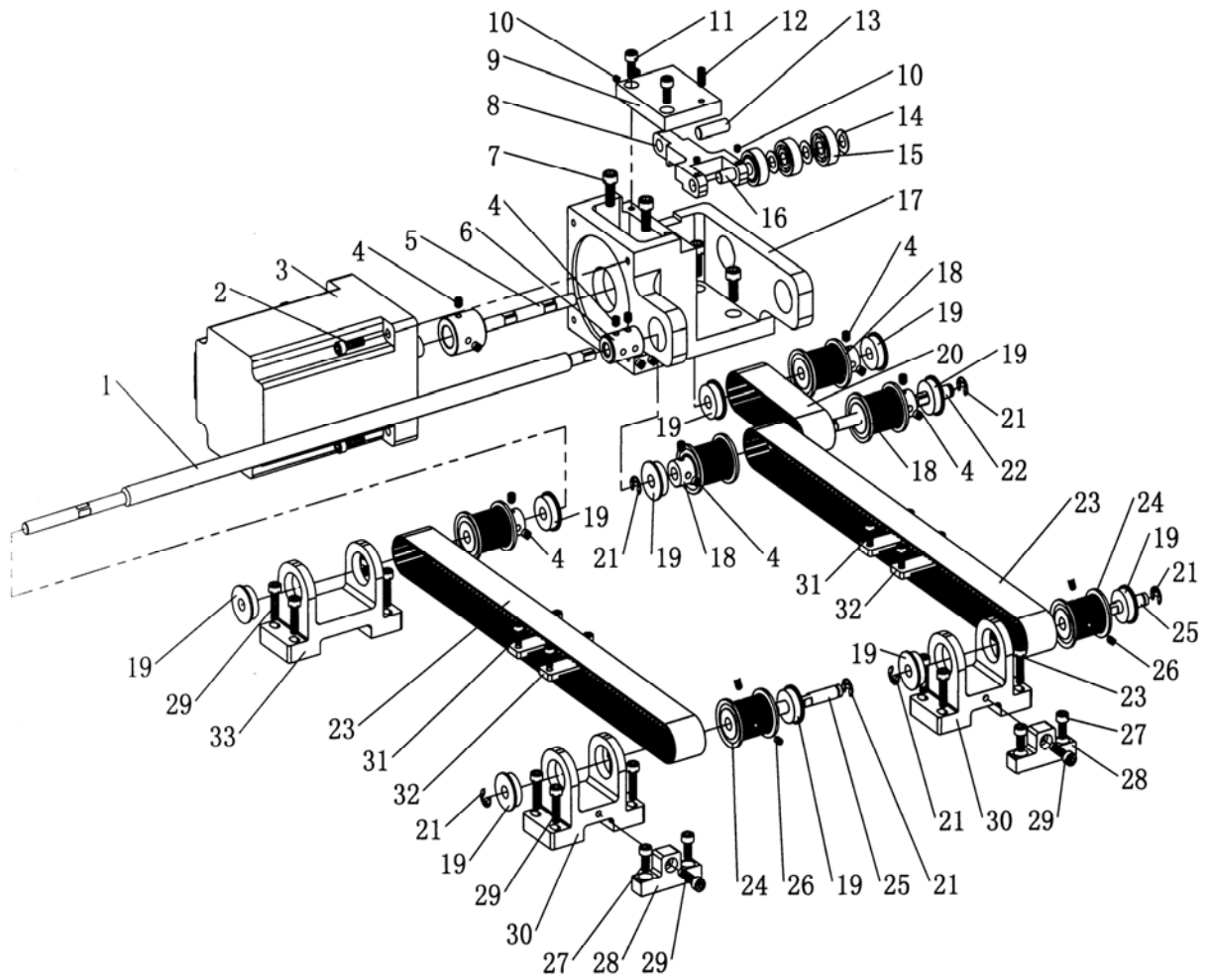
F.Y MECHANISM(1)



F.Y MECHANISM(1)

Fig. No.	Part No.	Description	Pcs.	Remarks
F01	HBG3252081	Base plate supportor (big)	2	
F02	HBG3251081	Base plate	1	
F03	H415060200	Screw	12	M6×20
F04	H415050160	Screw	15	M5×16
F05	H415040120	Screw	8	M4×12
F06	HBG3270081	Y-shaft stop pole	4	
F07	H415050120	Screw	20	M5×12
F08	H415040080	Screw	8	M4×8
F09	HBG3269081	Link plate	2	
F10	HBG3272072	Y-shaft slide rail Assy.	4	
F11	HBG3253081	Base plate supportor (small)	2	
F12	HBG3284081	Y-shaft stop pole (short)	4	
F13	HBG3274081	Guide sleeve supportor	1	
F14	H415040100	Screw	8	M4×10
F15	HBG3276081	Guide sleeve	1	
F16	HBG3277081	Linear bearing	2	
F17	HBG3271081	Y-driving shaft	1	
F18	H415050200	Screw	3	M5×20
F19	H431050060	Screw	2	M5×6

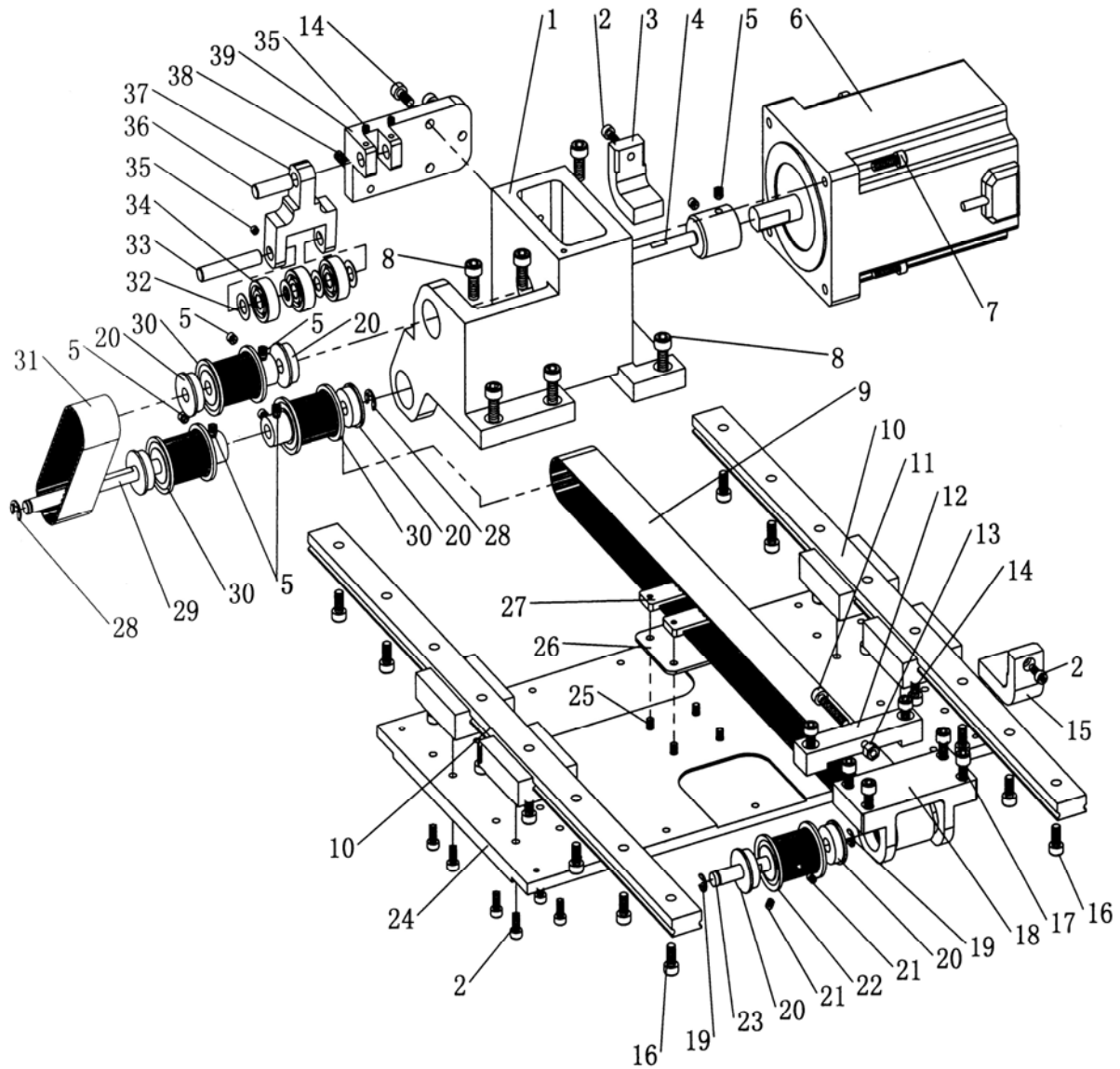
G.Y MECHANISM(2)



G.Y MECHANISM(2)

Fig. No.	Part No.	Description	Pcs.	Remarks
G01	HBG3264081	Pulley shaft (long)	1	
G02	H415050160	Screw	4	M5×16
G03	HBG3285081	Y-stepping motor	1	
G04	H431050060	Screw	14	M5×6
G05	HBG3257081	Stepped shaft	1	
G06	HBG3266081	Shaft connector	1	
G07	H415060160	Screw	4	M6×16
G08	HBG3282081	Tensioning wheel supportor	1	
G09	HBG3281081	Tensioning wheel base	1	
G10	H431040040	Screw	4	M4×4
G11	H415050120	Screw	2	M5×12
G12	H427050120	Screw	1	M5×12
G13	HD811B8001	Pin	1	
G14	H7335C8001	Washer	4	
G15		Bearing	3	628ZZ
G16	HBG3283081	Pin	1	
G17	HBG3255081	Base for Y-stepping motor	1	
G18	HK44D68001	Pulley (B)	4	
G19	HK41B58001	Bearing	10	
G20	HBG3258081	Timing belt (short)	3	
G21	H007013060	Stop ring	6	
G22	HBG3259081	Pulley shaft	1	
G23	HK45D58001	Timing belt	2	
G24	HK45D38001	Pulley A	2	
G25	HK45D48001	Pulley shaft (B)	2	
G26	H431040060	Screw	4	M4×6
G27	H415050120	Screw	4	M5×12
G28	HBG3267081	Base for tension adjuster	2	
G29	H415050200	Screw	14	M5×20
G30	HBG3261081	Pulley base (A)	2	
G31	H415040100	Screw	8	M4×10
G32	HBG3268081	Belt trestle	4	
G33	HBG3263081	Pulley base (B)	1	

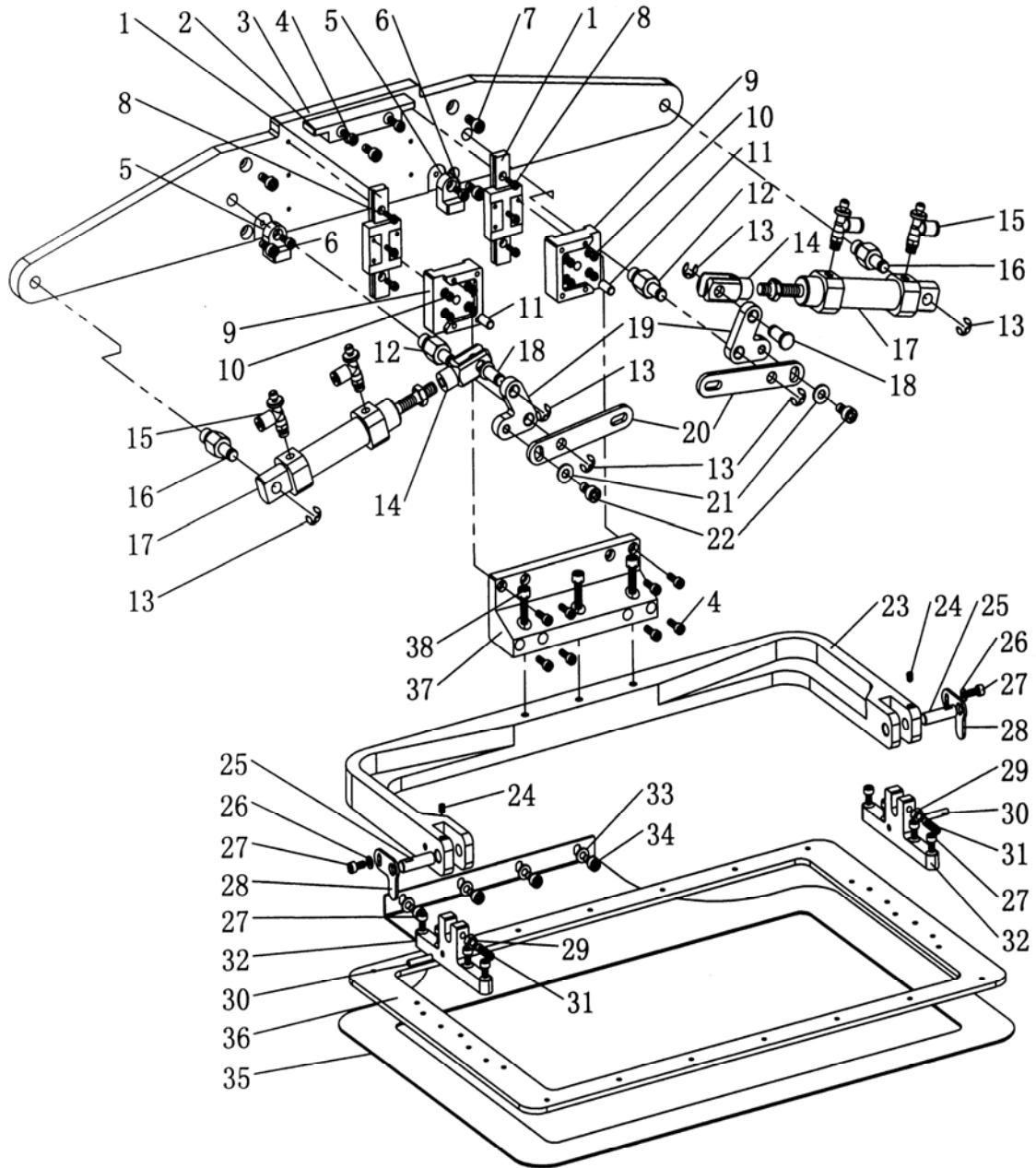
H.X MECHANISM



H.X MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
H01	HBH3252081	Base for X-servomotor	1	
H02	H415040100	Screw	18	M4×10
H03	HBH3262081	Stop block	1	
H04	HBG3257081	Stepped shaft	1	
H05	H431050060	Screw	8	
H06	HBH3254081	X-stepping motor	1	
H07	H415050160	Screw	4	M5×16
H08	H415060160	Screw	6	M6×16
H09	HBH3257081	Timing belt	1	
H10	HBH3261072	X-guide rail Assy.	2	SSE2B20-460 (MISUMI)
H11	H415050300	Screw	1	M5×30
H12	HBH3258081	Base for belt tension adjuster	1	
H13	H003001050	Nut	1	M5
H14	H415050120	Screw	5	M5×12
H15	HBH3263081	Stop block (R)	1	
H16	H415050120	Screw	16	M5×12
H17	H415050200	Screw	4	M5×20
H18	HBH3256081	Pulley base	1	
H19	H007013060	Stop ring	2	6
H20	HK41B58001	Bearing	6	
H21	H431040060	Screw	2	M4×6
H22	HK45D38001	Pulley (A)	1	
H23	HK45D48001	Pulley shaft (short)	1	
H24	HBH3260081	Guide rail base plate	1	
H25	H415040120	Screw	4	M4×12
H26	HBH3259081	Belt cushion block	1	
H27	HK43D88001	Belt support block	2	
H28	H007013060	Stop ring	2	6
H29	HBH3253081	Pulley shaft	1	
H30	HK44D68001	Pulley (B)	3	
H31	HBG3258081	Timing belt (short)	3	
H32	H7335C8001	Washer	4	
H33	HBG3283081	Pin	1	
H34		Bearing	3	628ZZ
H35	H431040040	Screw	4	M4×4
H36	HD811B8001	Ping	1	
H37	HBH3267081	Tensioning wheel frame	1	
H38	H427050120	Screw	1	M5×12
H39	HBH3266081	Tensioning wheel base	1	

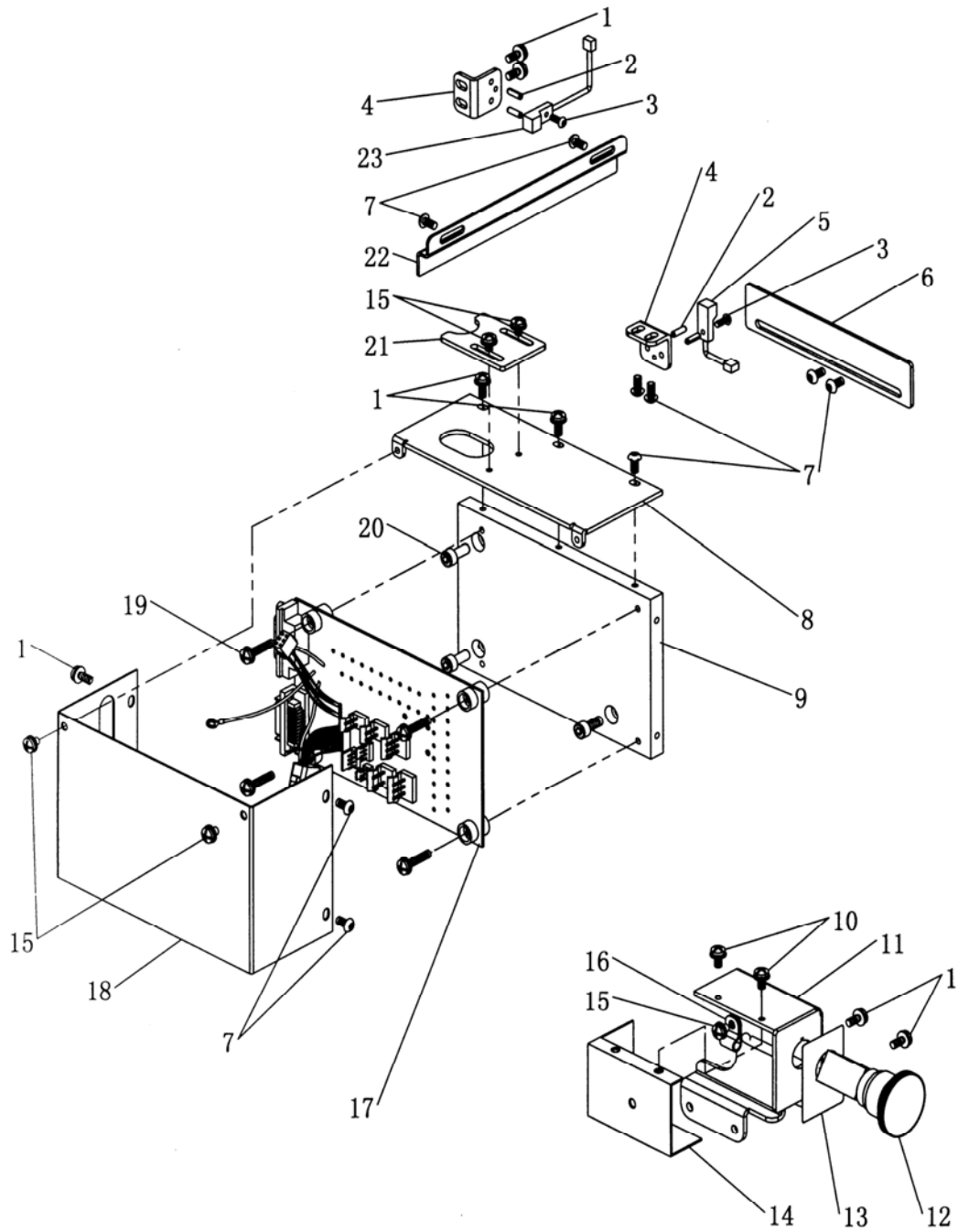
I.PRESSER FOOT MECHANISM



I.PRESSER FOOT MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
I01	HBI3253072	Presser guide rail Assy.	2	SSEBL13-80 (MISUMI)
I02	HBI3281081	Stop block (Upper)	1	
I03	HBI3252081	Air cylinder base plate	1	
I04	H415040120	Screw	10	M4×12
I05	HBI3265081	Stop block (Under)	2	
I06	H415040100	Screw	2	M4×10
I07	H415050120	Screw	5	M5×12
I08	H415030100	Screw	6	M3×10
I09	HBI3255081	Link plate	2	
I10	H415030080	Screw	8	M3×8
I11	HBI3256081	Pin	2	
I12	HBI3258081	Screw	2	
I13	H007013060	Stop ring	6	6
I14	HBI3261081	Air connector	2	
I15	HG02B18001	One-way throttle valve	4	
I16	HBI3264081	Pin bolt	2	
I17	HBI3260081	Micro air cylinder	2	MFC-20×20-CA
I18	HBI3263081	Link pin	2	
I19	HBI3262081	Lifter lever	2	
I20	HBI3257081	Link	2	
I21	H4728H8001	Washer	2	
I22	H415060120	Screw	2	M6×12
I23	HBI3272081	Presser frame	1	
I24	H431040060	Screw	2	M4×6
I25	HBI3277081	Hinge shaft	2	
I26	H3200I2030	Washer	2	
I27	H415040080	Screw	10	M4×8
I28	HBI3278081	Stop plate	2	
I29	H003002050	Nut	2	M5
I30	HBI3275081	Stop pin	2	
I31	H429050200	Screw	2	M5×20
I32	HBI3274081	Connection seat	2	
I33	H005001050	Washer	4	5
I34	H415050080	Screw	4	M5×8
I35	HBI3280081	Feed plate	1	
I36	HBI3279081	Presser plate	1	
I37	HBI3271081	Presser frame seat	1	
I38	H415050200	Screw	3	M5×20

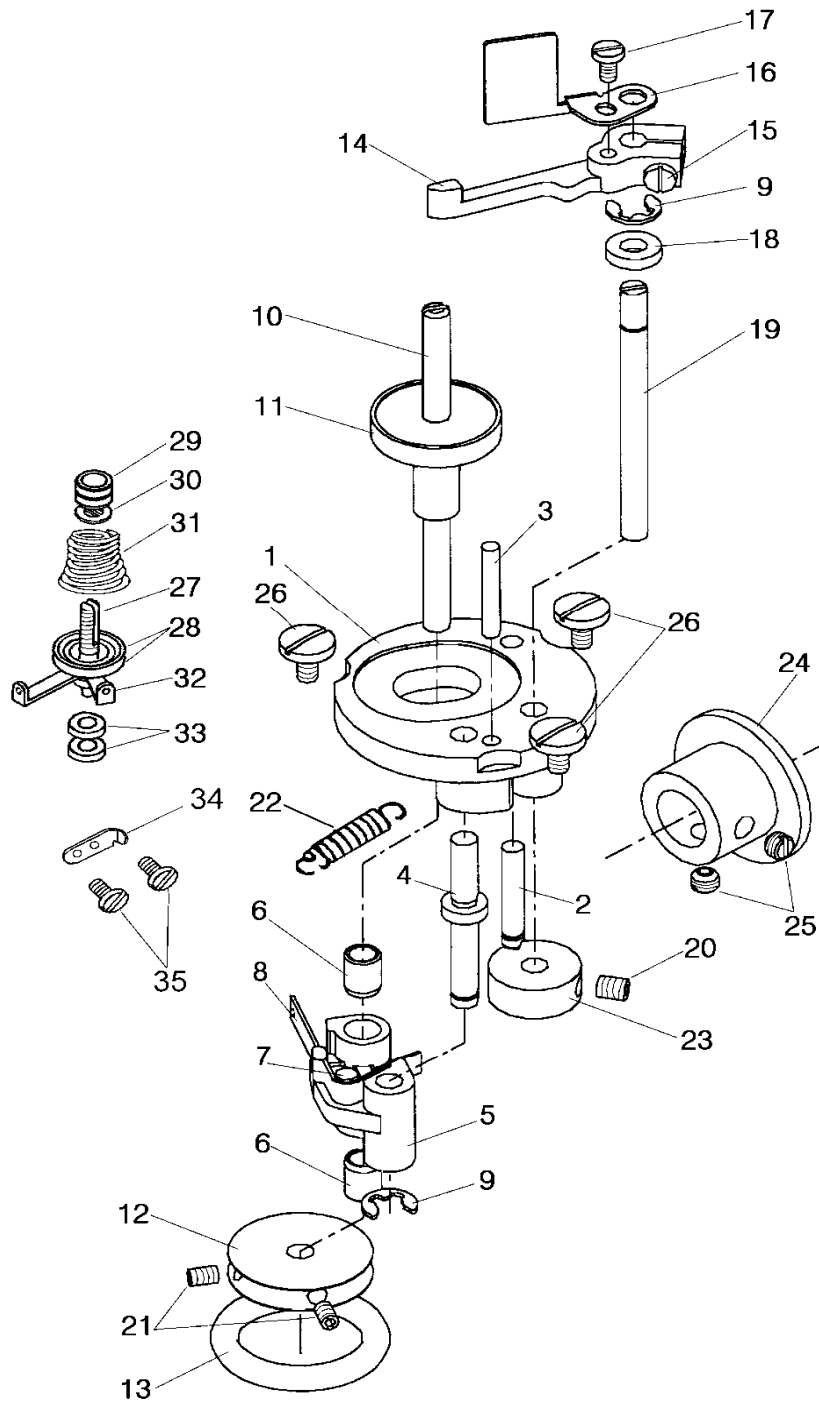
J.ELECTRICAL PARTS



J.ELECTRICAL PARTS

Fig. No.	Part No.	Description	Pcs.	Remarks
J01	HZ11040100	Screw	8	M4×10
J02	H610030100	Elastic pin	4	3×10
J03	H416030080	Screw	2	M3×8
J04	HBJ3256081	Synchronizer base	2	
J05	H6670D7101	Y-approach switch Assy.	1	
J06	HBJ3259081	Y-shaft detect plate	1	
J07	H416040080	Screw	9	M4×8
J08	HBJ3254081	Circuit board cover (small)	1	
J09	HBJ3251081	Circuit board base plate	1	
J10	HZ11040080	Screw	2	M4×8
J11	HBJ3261081	Base plate for emergency switch	1	
J12	H6635I7101	Emergency switch Assy.	1	
J13	HM014H8001	Cover	1	
J14	HM006H8001	Cover	1	
J15	HZ11040060	Screw	5	M4×6
J16	HA708P0668	Nylon clip	1	
J17	H6606I8001	Circuit board	1	
J18	HBJ3253081	Circuit board cover (big)	1	
J19	H6609I8001	Screw	4	
J20	H415050120	Screw	3	M5×12
J21	HBJ3252081	Cable lock plate	1	
J22	HBJ3257081	X-shaft detect plate	1	
J23	H6658D7101	X-approach switch Assy.	1	

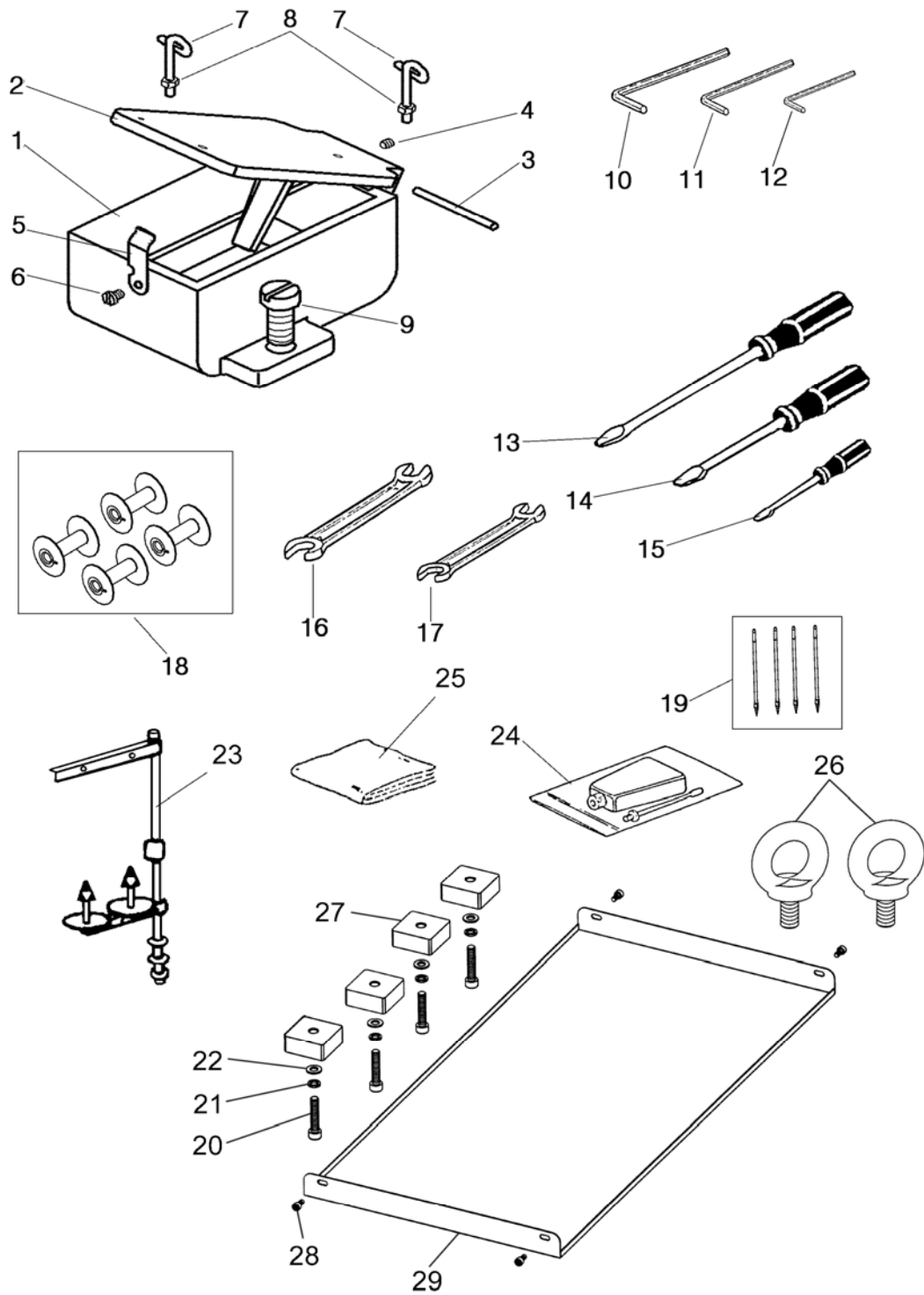
K.BOBBIN WINDER MECHANISM



K.BOBBIN WINDER MECHANISM

Fig. No.	Part No.	Description	Pcs.	Remarks
K01	H6706N8001	Bobbin winder plate	1	
K02	H6707N8001	Pin	1	
K03	H6708N8001	Pin	1	
K04	H7210J8001	Bobbin winder crank shaft	1	
K05	H7213J8001	Bobbin winder crank shaft	1	
K06	H6713N8001	Bushing	2	
K07	H6714N8001	Pin	1	
K08	H6715N8001	Bobbin winder spring	1	
K09	H007013050	E-type ring	2	GB/T896 5
K10	H7205J8001	Bobbin winder shaft	1	
K11	H6717N8001	Bobbin base	1	
K12	H7214J8001	Driven wheel	1	
K13	H6658B8001	Friction rubber band	1	
K14	H6720N8001	Bobbin winder lever	1	
K15	HA100H2150	Screw	1	SM9/64(40)×11
K16	H7206J8001	Winding adjuster plate	1	
K17	H3200B2100	Screw	1	
K18	H6722N8001	Washer	1	
K19	H6723N8001	Shaft	1	
K20	H6731N8001	Set screw	1	M5×6
K21	H431030040	Set screw	2	HRC34-48
K22	H6724N8001	Spring	1	
K23	H6725N8001	Bobbin winder cam	1	
K24	H7005D8001	Driving Wheel	1	
K25	H4723D8001	Set screw	2	SM15/64(28)×4.5
K26	H3107G0662	Screw	3	SM11/64(40)×8
K27	H7208J8001	Screw	1	
K28	HA310B0705	Tension disc	2	
K29	HA115B0702	Nut	1	
K30	HA115B7010	Limit plate	1	
K31	H3300B2040	Spring	1	
K32	H6662B8001	Thread guide	1	
K33	H003008040	Washer	2	GB/T6172.1 M4
K34	H6756B8001	Blade	1	
K35	HA500C2070	Screw	2	SM9/64(40)×5

L.ACCESSORIES



L.ACCESSORIES

Fig. No.	Part No.	Description	Pcs.	Remarks
L01	H7207K8001	Silicon oil box	1	
L02	H7208K8001	Oil box cover	1	
L03	H605030400	Pin	1	GB/T119.2 3×40
L04	H34411C410	Screw	1	SM9/64" (3.57) × 40/4
L05	H7209K8001	Spring	1	
L06	H3215K0693	Screw	1	SM9/64 (40) × 5
L07	H7210K8001	Thread guide	2	
L08	H7211K8001	Nut	2	SM3/32 (56)
L09	HA800F2020	Screw	1	SM15/64 (28) × 13.5
L10	HB00001050	Hexagon socket screw key	1	GB/T5356 5
L11	HB00001040	Hexagon socket screw key	1	GB/T5356 4
L12	HB00001030	Hexagon socket screw key	1	GB/T5356 3
L13	HA300J2070	Screw driver (size L)	1	
L14	HA300J2200	Screw driver (size M)	1	
L15	HA300J2210	Screw driver (size S)	1	
L16	HJ02090110	Spanner	1	GB/T4388 9×11
L17	HJ02100130	Spanner	1	GB/T4388 10×13
L18	H7228D8001	Bobbin	4	
L19	H7220C8001	Needle	4	DY*3 26#
L20	H415080400	Screw	4	M8×40
L21	H005008080	Spring washer	4	8
L22	H005001080	Washer	4	8
L23	HA200J2030	Thread stand assy	1	
L24	H200400069	Oiler	1	
L25	H7212K8001	Head cover	1	
L26		Screw	2	GB/T 825 M10
L27	HBN3270081	Support block	4	
L28	H415050100	Screw	4	M5×10
L29	HBN3253081	Oil pan	1	

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The description covered in this manual is subject to change for improvement of the commodity without notice

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