BS 473 - DD PARTS / INSTRUCTION / ENGLISH / 2021

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CONTENTS

1.Observe the basic safety measures ,including,but not limited to the following ones ,whenever you use the machine.

2.Read all the instructions ,including ,but not limited to this instruction Manual before you use the machine In addition ,keep this Instructions Manual so that you may read it at anytime when necessary.

3.Use the machine after it has been ascertained that it conforms with safty rules/standards valid in your country.

4.All safety devices must be in position when the machine is ready for work or in operation.
The operation without the specified by safety devices is not allowed..

5.This machine shall be operated by appropriately-trained operators.

6. For your personal protection we recommend that you wear safety glasses

7. For the following ,turn off the power switch or disconnect the power plug of the machine from the receptacle.

7-1 For threading needle ,looper ,spreader etc .and replacing bobbin.

7-2 For replacing parts of needle ,presser foot ,throat plate ,looper ,spreader ,feed dog ,needle guard folder ,cloth guide ect.

7-3 For repair work

7-4 When leaving the working place or when the working place is unattended.

7-5 When using clutch motors without applying brake , it has to be waited until the motor stopped totally .

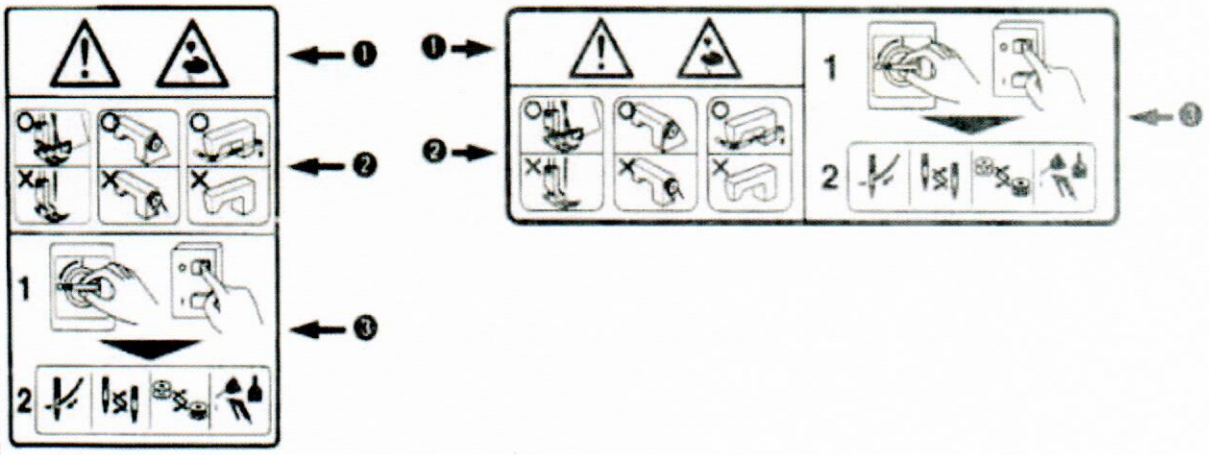
8. If you should allow oil ,grease ,ect .used with the machine and devices to come in contact with your eyes or skin or swallow any of such liquid by mistake ,immediately wash the contacted areas and consult a medical doctor.

9.Tampering with the live parts and devices ,regardless of whether the machine is powered ,is prohibited.

10. Repair ,remodeling and adjustment works must only be done by appropriately trained technicians or specially skilled personnel .Only spare parts designated by JOYEE can be used for repairs.
11. General maintenance and inspection works have to be done by appropriately trained personnel.
12. Repair and maintenance works of electrical compinents shall be conducted by qualified elecreic technicians or under the audit and guidance of specially skilled personnel.
13. Before making repair and maintenance works on te\he machine equipped with pneumatic parts such as an air cylinder,the air compressor has to be detached from the machine and the compressed air supply has to be cut off.Existingresidual air pressure after disconnecting the air compressor from the machine has to be expelled.Exceptions to thisare only adjuustments and performance checks done by appropriately trained technicians or specially skilled persinnel.
14.Periodecally clean the machine throughout the period of use.

15.Grounding the machine is always nessary for the normal operation of the normal operation of the machine .The machine has to be operated in an environment that is free from strong noise sources such as high-frequency welder.
16. An appropriate power plug has to be attached to the machine by electric technicians .Power plug has to be connected to a grounded receptacle.

17. The machine is only allowed to be usd for the purpose intended .Other used are not allowed.
18. Remodel or modify the machine in accorance with the safety rules/standards while taking all the effective safety measures. JOYEE assumes no responsibility for damage caused by remodeling or modification of the machine .



These is the possibility that slight to serious injury or death may be caused ,These is the possinility that injury may be caused by touching moving part .
To perform sewing work with safety guard ; To perform sewing work with safety cover
To perform sewing work with safety protection device.
Turn off the power and perform "threading' ,replacement of bobbin or needle ,cleaning ,adjustment ,and lubrication.

1. To avoid personal Injury,never put your fingers under the needle when you turn ON the power switch or operate the sewing machine.
2. To avoid personal injury,turn OFF the power switch when you tilt the machine head.
3. To prevent possible personal Injury caused by being caught In the machine, keep your tingers. head and clothes away from the handwheel and the thread take-up while the sewing machine is in operation. In addition. place nothing around it.
4. Never operate the machine with the safety devices such as needle bar cover,finger guard, eye guard cover,etc. removed.
5. To avoid personal Injury,be careful not to allow your fingers in the machine when tilting the machine head.

1. For the safety,never operate the sewing machine with the ground wire for the power supply removed.
2. Be sure to turn OFF the power switch in prior when connecting / disconnecting the power plug.
3. When thunders occurs, stop the work for the safety and disconnect the power plug.
4. When the sewing machine is suddenly moved from a cold place to a warm place, there is a case where dew condensation may occur. Turn ON the power after there is no worry of the drop of water.
5. To prevent fires, periodically draw out the, power plug from the plug socket and clean the root of the pins and the space between pins.

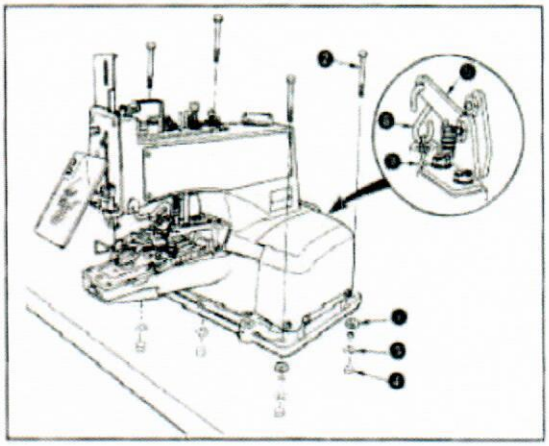
· Use the oil adaptable to the machine specifications.
· Clean the sewing machine thoroughly before using it for the first time.
· Remove all dust collected on the sewing machine during the transportation.
· Confirm that the voltage and phase are correct.
· Confirm that the power plug is properly connected.
· Never use the sewing machine in the state where the voltage type is different from the designated one.
· The direction of rotation of the sewing machine is clockwise as observed from the handwheel side. Be careful not to rotate It In reverse direction.
· Before applying power, release the stop-motion mechanism and turn by hand the needle driving pulley in order to ensure that the machine is in order.
· To install the machine, the frame support bar has to be firstly inserted into the table.
· When operating the sewing machine, turn ON the power switCh after properly setting the head on the table.
· Operate the handwheel after the sewing machine has totally stopped.

SPECIFICATIONS

	JY-K777
Sewing speed	Normal 1300rpm (Max 1500rpm)
Number of stitches	8 ,16 and 32 stitches
Feed amount	Lateral feed 2.5 to 6.5mm Longitiudinal feed 0 , 2.5 to 4.5mm
Button size	10 to 28mm
Needle used	Tqx7 #16(#14~#20)
Lubricating oil	Oil for sewing machine

PREPARATION OF THE SEWING MACHINE

Put rubber cushion①on the table place the machine head on the rubber cushion and fix it to the table using screw ② , plain washers③and nuts④. Attach "S" chain hook⑥and chain⑦to stop motion trip lever ⑤.



LUBRICATION

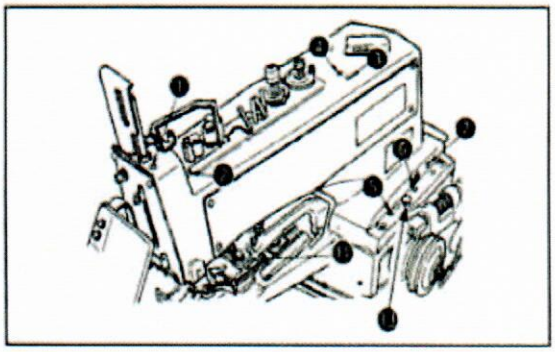
1) Open the side cover,and apply oil to the portions shown by the red red marks 1 to 12 (Apply approximately 1 cc of oil to the respective lubricating places one to two times a week)

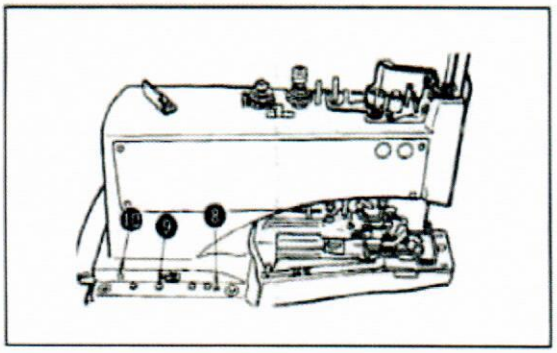
2)Loosen connecting screw 13 tilt the machine head backward and apply grease to crossed helical gear 15 and worm gead 16

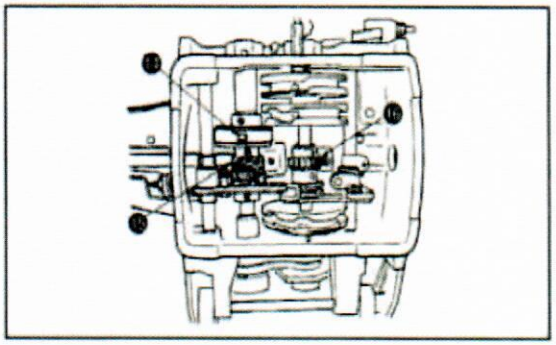
3)Check ,approximately once a week ,that oil amout is sufficient to reach the top of the oil felt placed inside the bed bed mounting base .If the amout of oil is insufficient ,add an adequate amount of oil .At this time ,also apply oil to crank rod 14

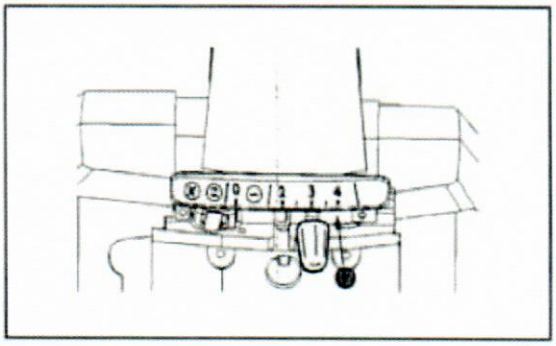
WARNING:

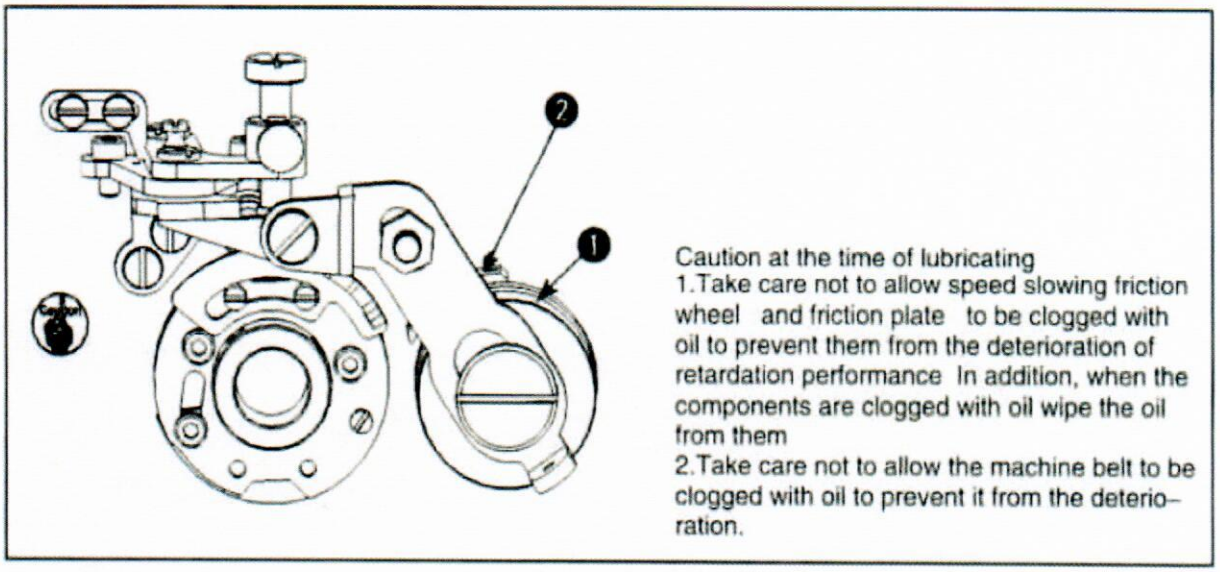
To protect against possible personal injury due to abrupt start of the machine,be sure to start the following work after turning the power off and ascertaining that the motor is at rest







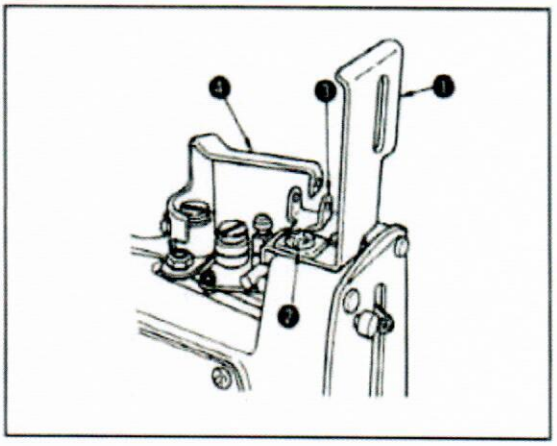




Caution at the time of lubricating
1.Take care not to allow speed slowing friction wheel and friction plate to be clogged with oil to prevent them from the deterioration of retardation performance In addition, when the components are clogged with oil wipe the oil from them
2.Take care not to allow the machine belt to be clogged with oil to prevent it from the deterio-ration.

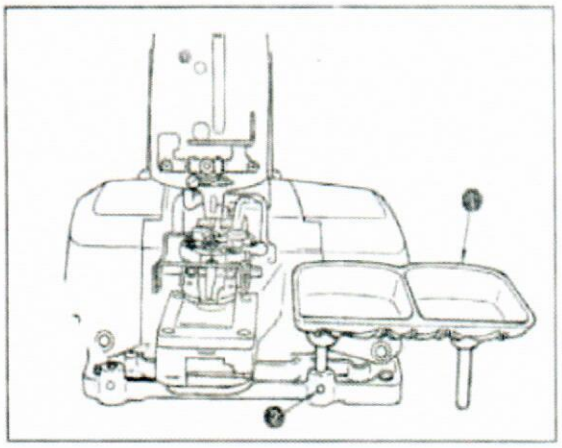
Attaching the needle

1)Loose screw ② and remove thread guide ③
2)Place needle bar guard ① under thread guide ③ and attach guide ③ so that lever ④ comes to the center of it at the start of the machine .
3)Fix the cover with screw ②



Attaching the needle bar cover

Insert the posts of button tray ❶ in hole on the right of the machine sub-base and tighten each setscrew❷.



Threading the machine

Thread themachine head in the order of ❶to ❹ as shown in the illustration given above ,then ,pass the thread through the needle eye from the front for approximately 60 to 70mm as you depress nipper releasing knurled thumb nut

Standard needle is Tqx1 #16Ⓐ

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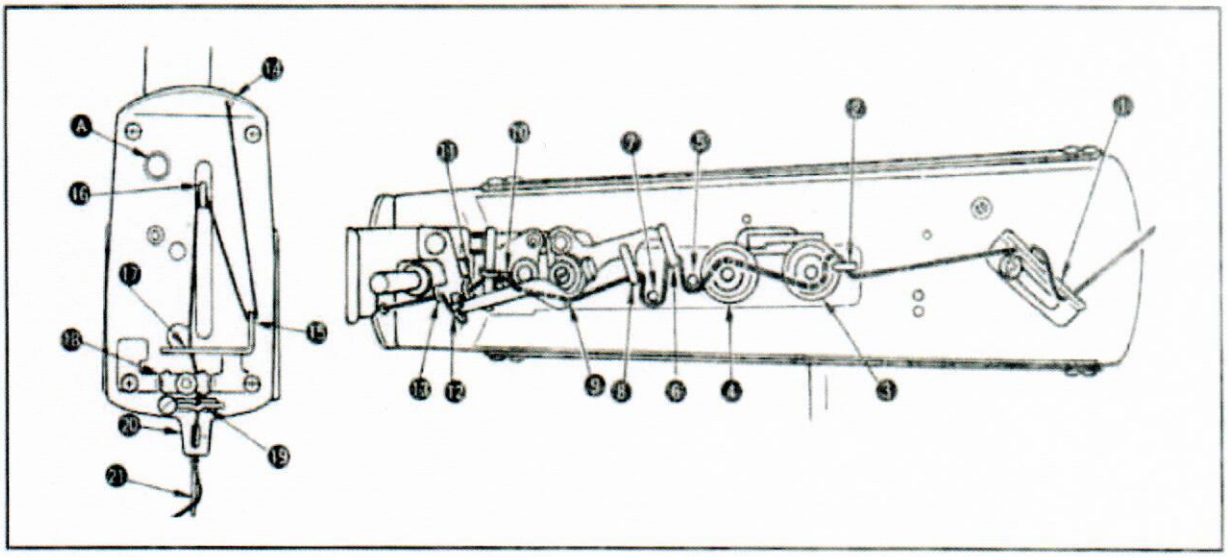
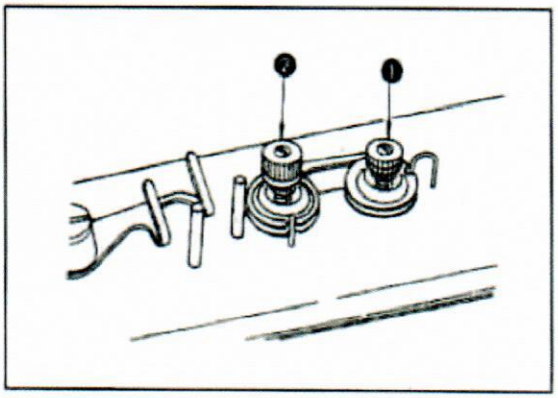


Thread tension adjustment

Tension post No1❶is used to adjust the thread tension to sew on the button and a relatively low tension will be enough,Tension post No2❷is used to adjust the thread tension applied to the root of the button sewing stitches , Thistension must be determined According to the type of thread ,fabric and thickness of the button and must be higher than that of tension post No1 ❶Turn the tension nuts clockwise to increase or counterclockwise to reduce the thread tension



Adjustment of the thread pull-off lever

To adjust the thread pull-off lever insert a screwdriver through an opening in the machinearm side cover (left),loosen screw and adjust the position of nipper bre block(rear) to the left or the right. If the end of thread is drawn from arrow hole A in the button after sewing, changethe position of nipper bar block (rear) to the left.Move the lever to the right when the thread endcomes out from arrow hole B.

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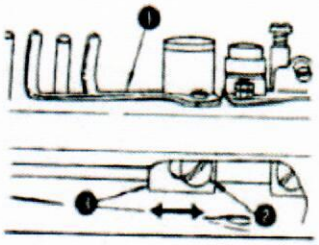
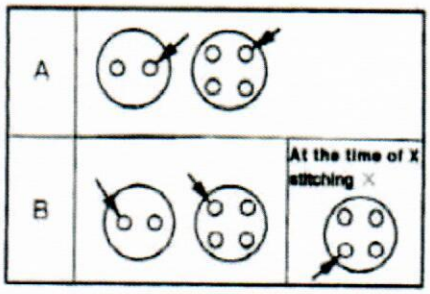
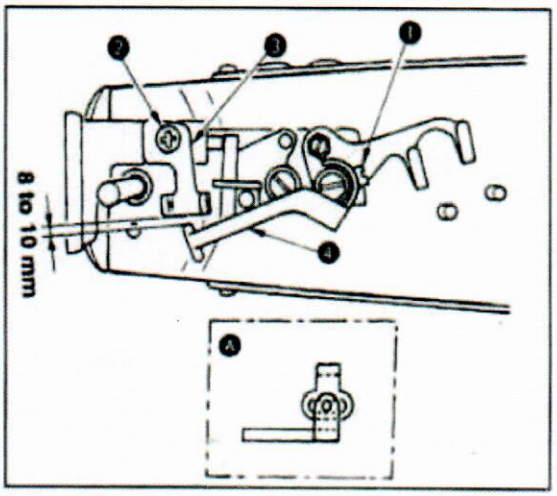




Adjustment of the thread pull-off lever



When the machine is in the stop-motion state, loosen screw❶Tighten setscrew❶so that there is a clearance of 8 to 10 mm as a standard between the end ofthread tension guide ❸ and ❹ end of lever.

Afher the adjustiment,make sure that the thread path is within the slot as illustrated in fig Ⓐ.When the machine starts,ifthe thread paths do not coincide with each other,loosen screw❷in the tension thread guide and adjust it properly.

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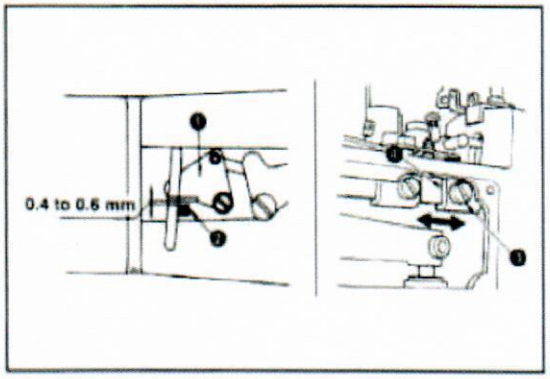
Adjustment of the thread pull-off lever



1)Provide a 0.4 to 0.6mm clearance between nipper block ❷ and nipper❶ to prevent the nnipper❶ from holding the thread while the machine is in operation

2)loosen screw❸ and move nipper bar block ❹ to the right or the lift.

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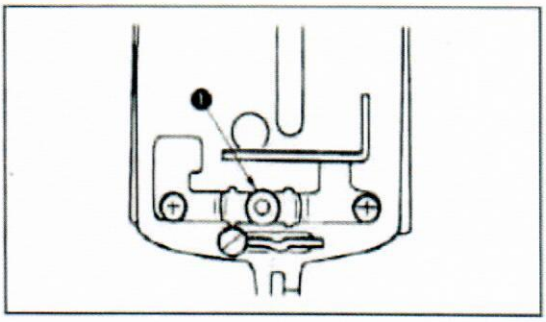
Adjusting the thread tension guide on the face plate



If the formation of seams at the start of sewing is failed and the seams are formedon the way even , when the thread pull-off lever is adjustied ,turn thumb nut ❶ to decrease the thread tension.

Need-to-looper relation

Adjust the needle-to-looper relation as follows:

1)Depress the pedal fully forward ,turn the needle driving pully in the normal sewing direction by hand to bring down the needle bar to the lowest position of its stroke and loosen screw ❶(adjusting the needle bar height)

2)Adjust the height of the needle bar using the top two lines engraved on the needle bar❷for the TQX1 needle and using the button two lines foe the TQX7needle ,Align the upper line Ⓐ with the buttom end face of needle bar bushing (lower)❸ and tighten screw ❶ .At this time ,tighten the screw so that groove Ⓒ of the needle faces the front.

3)Loosen screw ❹ and turn by hand the needle driving pully until lower line Ⓑ of two lines aligns with the bottom end face of needle bar bushing (lower)❸

4)By keeping the ❻achine in this state ,align looper blade❺with the center of the needle and tighten screws❹

5)Loosen screws and provide a 0.01 to 0.1mm clearance between the looper and the needle tighten screws ❻

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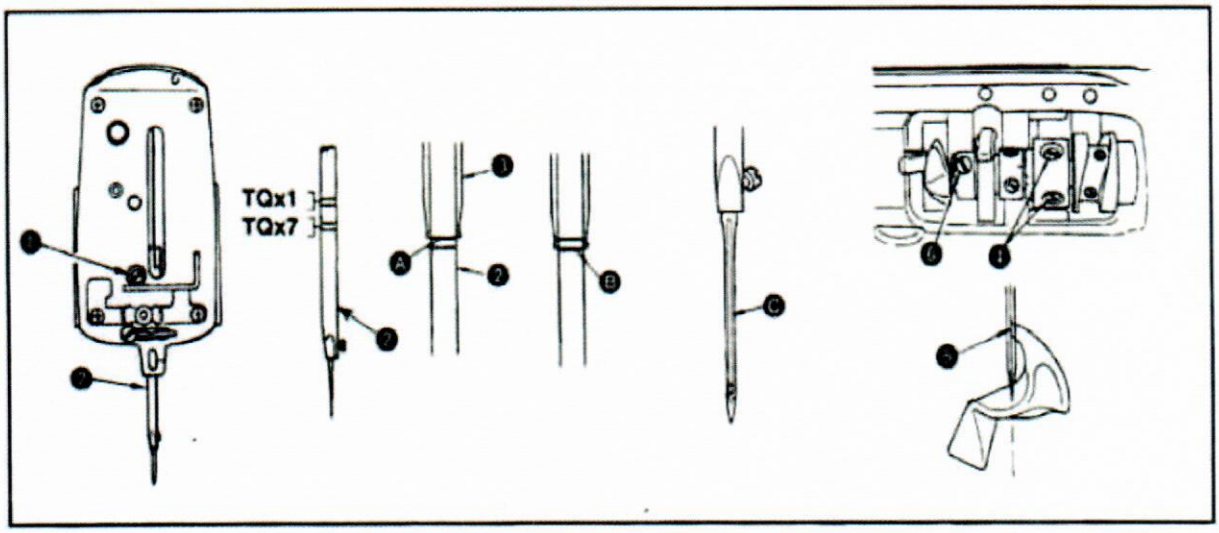
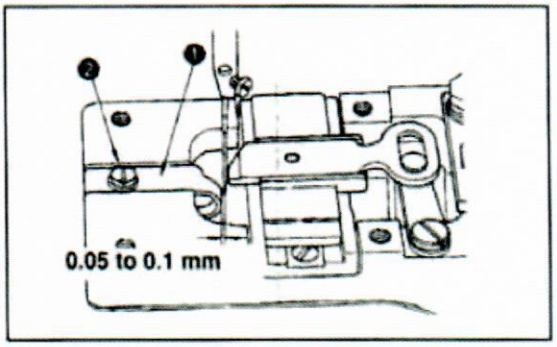


Position of needle guide

Loose screw❷and provide a 0.05 to 0.1mm clearance between the needle guide❶and the needle by moving the needle guide ❶ to the left or the right when the needle is in the lowest position.



WARNING

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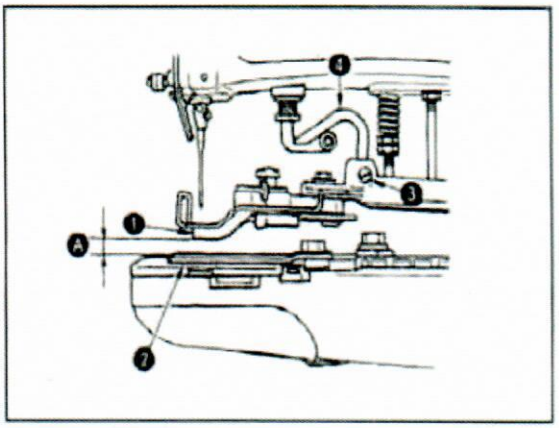
Height of the button clamp



1)The standard clearance Ⓐ between the rear side of the bottom face of button clamp jaw lever ❶ and the top surface of feed plate ❷ is 8mm at the position where the machine has stopped after sewing.
2)To adjust the height of the button clamp unit , loosen screw ❸ in the button clamp lifting hook and move button clamp lifting hook ❹ up or down.

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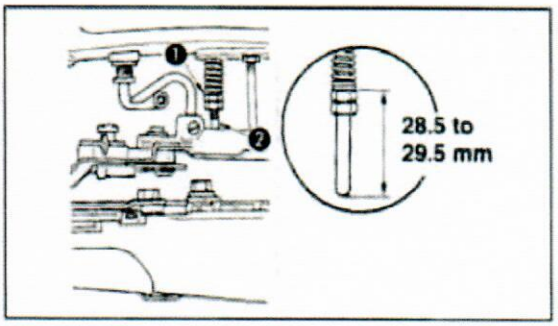
Work pressing force



The standard work pressing force is by providing a 28.5 to 29.5 mm between the top end of nut ❶ and the bottom end of pressure adjusting bar ❷ .
Turn nut ❶ to adjust it

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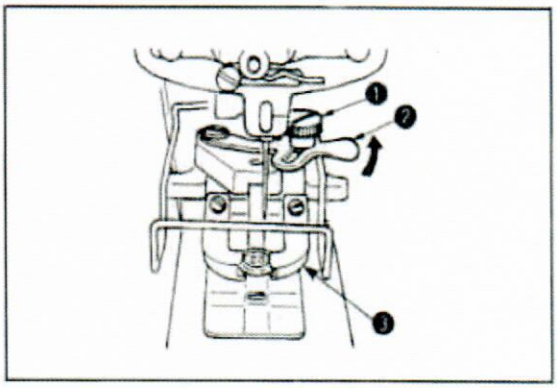
Adjustment of the button clamp stop lever



When clamp screw ❶ is loosened in the state of stop-motion ,button clamp jaw levers ❸ opens/closes with button clamp stop lever ❷ ,Set a button to the correct position and fix button clamp stop lever ❷ at the position where taking in and fix button clamp stop lever ❶ at the position where taking in and out of the button is easily performed with clamp screw

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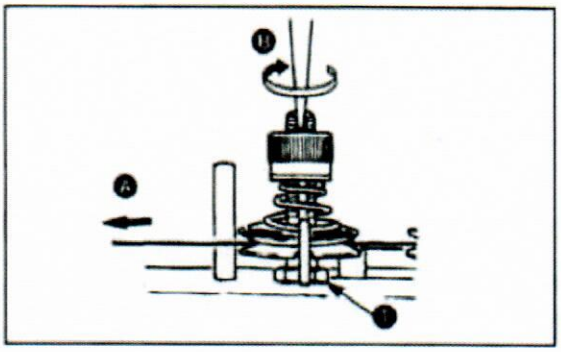
Timing of thread tension release



Turn the needle driving pully as you draw the thread in the direction of arrow mark Ⓐ and you will find a point at which the tension discs on the tension post No.2 release the thread . At this moment ,the standard distance from the top end of the needle bar bushing (upper) to the end of the needle bar is 44 to 47mm(in case of the needle of TQX7,54 to 57mm). Perform the following adjustments especially when the undermentioned troubles occur frequently,Loosen nut ❶ , insert the blade of a screwdriver to the top slot of the tension post No.2 and turn it in the direction of arrow mark Ⓑ to the lower the height of the thread floating bar and in the opposite direction to raise the height.

Phenomenon	Height of thread floating bar
1.When the stitch made on the wrong side of the workpiece is too loose	Make the needle bar slightly higher
2.When the thread is broken at the time of stop-motion	Make the needle bar slightly lower
3.When the thread is broken frequently	Make the needle bar slightly lower

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Setting for 2-or 4-hole buttons

Perform the adjustment after confirming that the sewing machine is located at the position of the stop-motion

Measure the distance between two holes in a button and set equally crosswise and lengthwisefeed regulators for 4-hole buttons.

Lengthwise feed

Push down lengthwise feed adjusting lever ❶ and set it to "0"for 0-hole buttons or a correspondingamount for 4-for buttons.

Crosswise feed

Loosen nut ❷and set section ❸of pointer Ⓐ to a corresponding amount. Then tighten nut ❷.a corresponding amount for 4-hole butto ns by the respective procedures below according to the sewing methods

The choice of pattern

When you need to sewing 4-hole buttons ,put down press foot .

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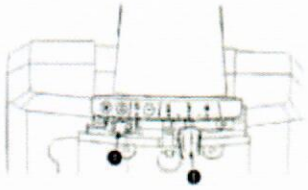
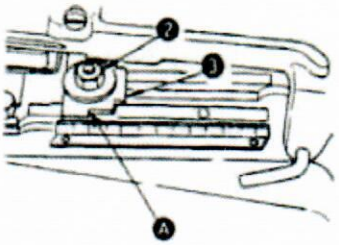
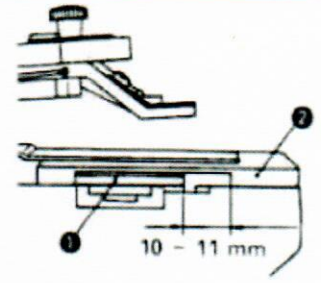
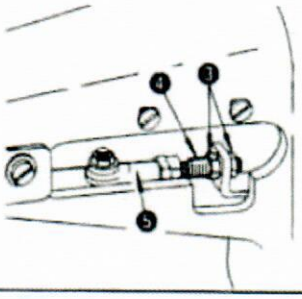




Automatic thread trimmer

When the presser has completely lifted at the stop motion position ,it is the standard that the clearance between thread trimming connecting plate (front) ❶ ,and the end face of the slit of throat plate ❷is 10 to 11mm.To adjust the aforementioned clearance,tilt the machine herd,remove the oil shield, loosen two nuts ❸ and move connecting screw back or forth.When you tighten nuts ❸,ensure that joint ❺ stays in the horizontal position.





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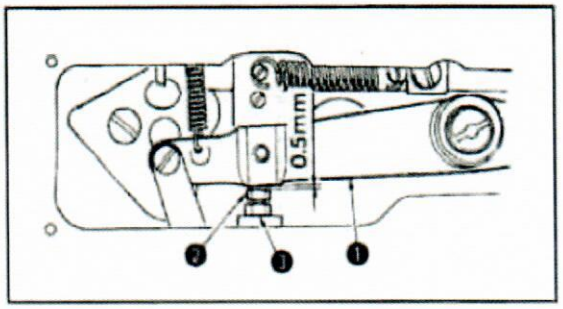
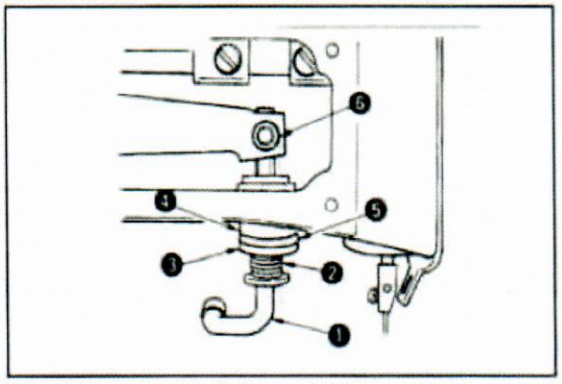
Clearance between the button clamp lifting lever and the adjusting screw

Provide a 0.5mm clearance between the end face of button clamp lifting lever ❶ and adjustinf screw ❷ at the stop-motion position ❸ .



How to set the L-shaped lifting rod

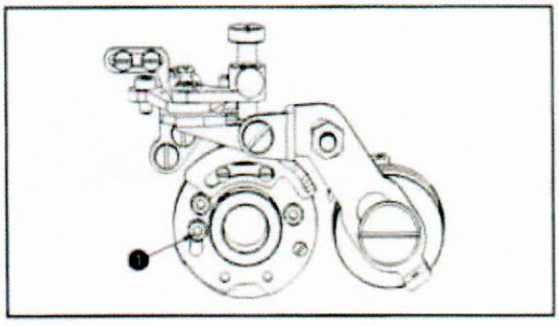


Put moving knife push-back spring❷,stop-motion rubber cushion washer ❸, stop-motion rubber cushion❹and stop-motion rubber cushion washer ❺, in this order, to L-shaped lifting rod❶.Make the jaw of the machine arm come into close contact with the end face of the stop-motion rubber cushionwadher at the stop-motin position and set the L-shaped lifting rod without a play. Then tighten it with screw❻.

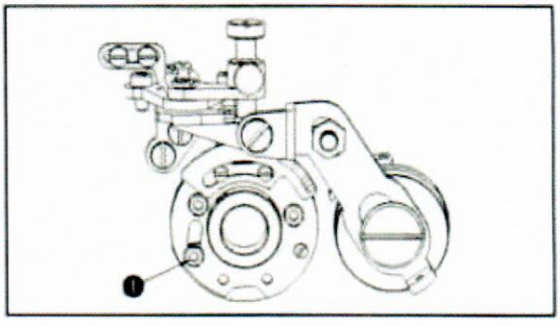
Setting a number of stitches

To change the number of stitches , open the left-hand side cover and change the number of stitches using stitch number adjusting screw and stitch number adjusting lever (optional)

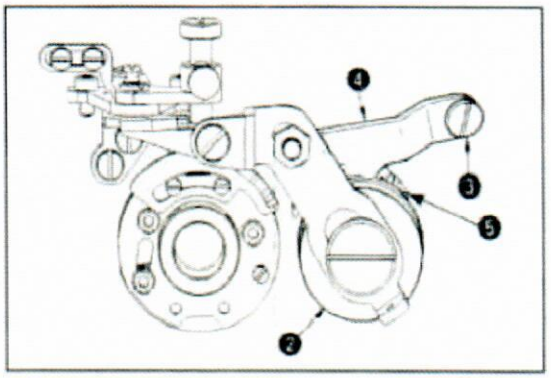
How to adjust 8 stitches: To make 8 stitches, loosen stitch number adjusting screw ❶ and fix it to the position as shownin the illustration



How to adjust 16 stitches: When stitch number adjusting screw ❶ being set for "8 stitches" has arrived at the left end ,loosen stitch number adjusting screw❶and fix it to the position as shown in the illustration



How to adjust 32 stitches: In the state of 16 stitches ,stitch number adjusting gear roller which is attached to the large gear comes to the lower side ,assemble stitch number ❷adjusting lever ❸ (supplied as accessories) using hinge screw ❹ (supplied as accessories)

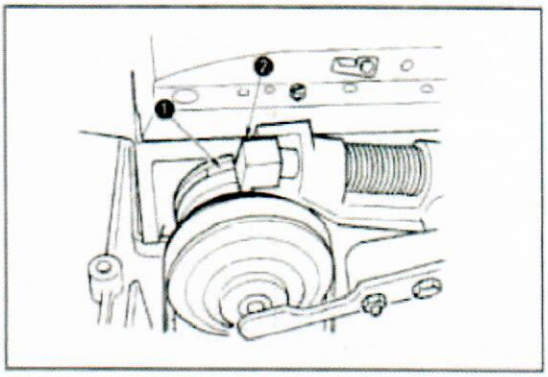


WARNING

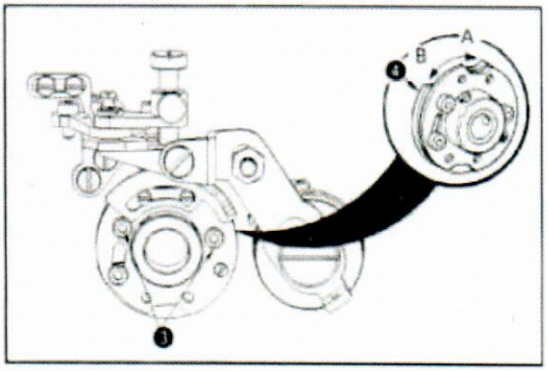
To protect against possible personal injure due to abrupt start of the machine ,be sure to the start the following work after turning the power off and ascertaining that the motor is at rest

Adjusting the position of the stop-motion

Adjust so that claw ❶ of the stop-motion cam comes in contact with stopmotion hook ❷ when the sewing machine completes the sewing and stops



Caution: When replacing the motor pulley and changing the sewing speed from 1300rpm to 1500rpm, and vice versa, be sure to readjust the position of the stop-motion.

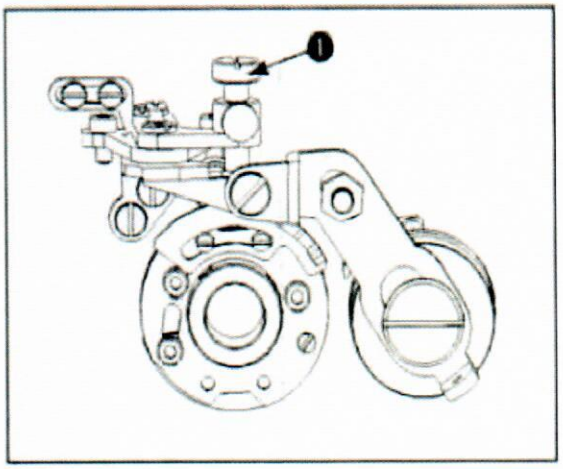


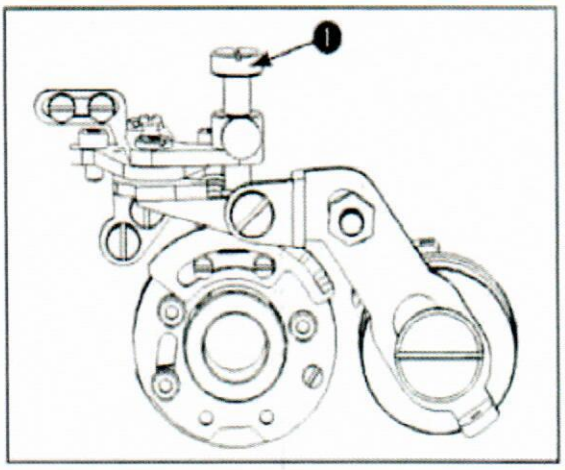
Adjusting procedure :When the stop-motion hook comes in contact with the stop-motion cam and rebounds ,(when there is a clearence between claw❶and stop-motion hook ❷)
loose two stop-motion position adjusting screw ❸ turn Stop-motion adjusting cam ❹ in the direction of A,and fix stop-motion position adjusting screws ❸ When the stop-motion hook stops before it comes in contact with the stop-motion cam claw Loose two stop-motion position adjusting screws❸ turn stop-motion adjusting cam ❹in the direction of B and fix stop-motion position adjusting screws ❸

Changeover of with/without knot-tying

To make "with knot-tying ",pull knot-tying changeover knob ❶ toward the down

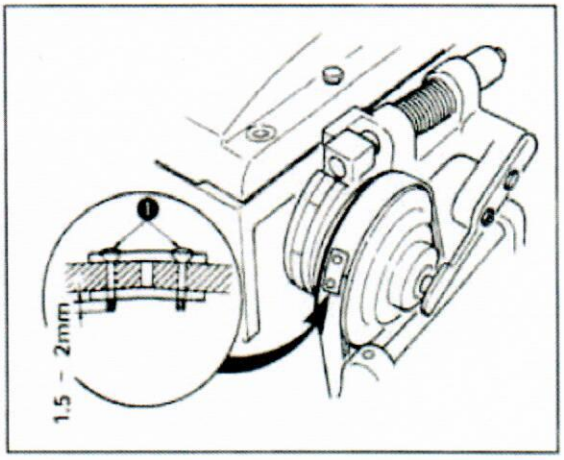
To make "with knot-tying ",pull knot-tying changeover knob ❶ toward the up





How to connect the metal fittings of the belt

Tighten connecting screws ❶ of the belt so that the screws protrude approximately 1.5 to 2mm from the reverse side as the standard.

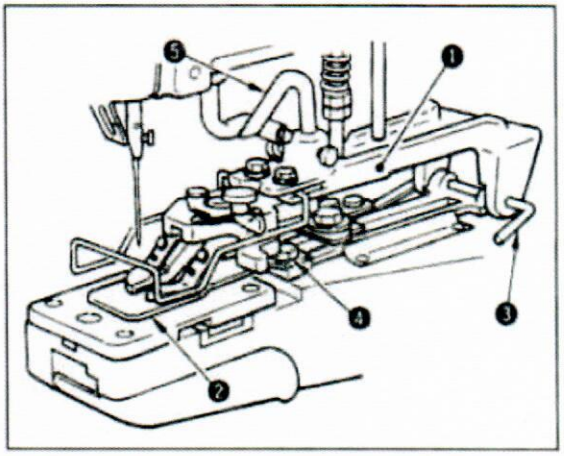


Caution :1.When assembling the belt to the pully and rotating the motor after closing the side cover ,confirm that the side cover dose not interfere with the metal fitting of the belt.

2. Take care not to allow the belt to be clogged with oil when assembling it

1) In order to install the attachment on the machine ,you may have to remove button clamp mechanism ❶ or feed plate ❷

2) Detach the snap ring from button clamp installing stud ❸ ,and you will be able to move button clamp mechanism assembly ❶ Remove screw ❹ ,and you can remove feed plate ❷



WARNING

To protect against possible personal injure due to abrupt start of the machine ,be sure to the start the following work after turning the power off and ascertaining that the motor is at rest

(ADJUSTMENT AND OPERATION)

1)Loosen screw ⑫ .let feed plate ⑥ recede 0.5 to 1.0 mm from the left end of button clamp jaw lever ❷ and retighten screw ⑫ .

2)Set a button in place,loosen screws ⑭ and ⑬ and align shank button holding clamp ⑮ with the center of the button.

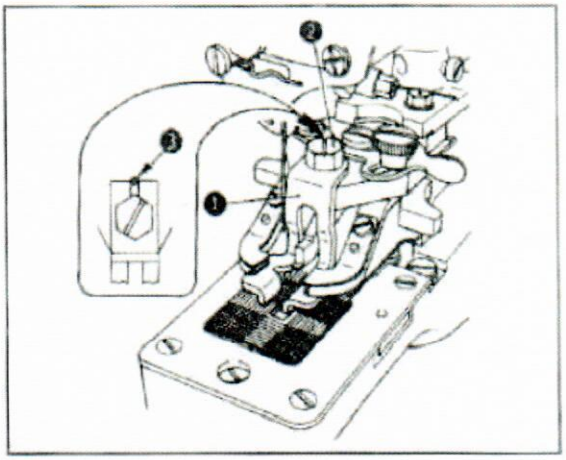
3)Shank button holding clamp ⑮ must give proper pressure to the button so that the buttonstays steadily in position while being sewn. Loosen a setscrew in thrust collar ⑯ and potate the thrust collar until shank button holding clamp ⑮ provides proper pressure.

4)You may fix button clamp block ⑰ in a convenient position for operation.

CAUTION:1.When you fix the thrust collar, ensure that button clamp rotating shaft ⑱ does not play axially in its bracket.

2.Adjust liting hook ㉑ and stoppef pin ⑲ so that L-shaped lifting rod roller ⑭ does not come in contack with button clamp bracket ❹

Attachment for the first process of wrapped-aroud button



(INSTALLATION)

Attach wrapped-around button foot ❶ to the ordinary button clamp jaw levers using screw ❷ and guide pin screw ❸Align foot ❶ with the jaw levers so that they permit a button to rest in the middle.

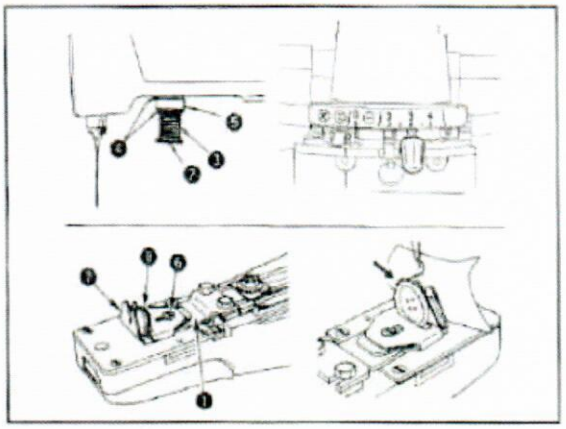
(ADJUSTMENT AND OPERATION)

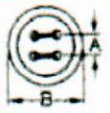
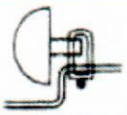
Adjustment and operation are almost same as those for the flat buttons,but you mustadjust the thread pull-off lever to provide more amount of thread in order to make the thread loose below the button for thread shank formation.(refer to 3-2.Adjustment of the thread shread pull-off lever,P.4)

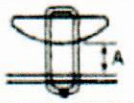
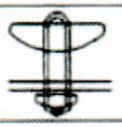
WARNING

To protect against possible personal injure due to abrupt start of the machine ,be sure to the start the following work after turning the power off and ascertaining that the motor is at rest

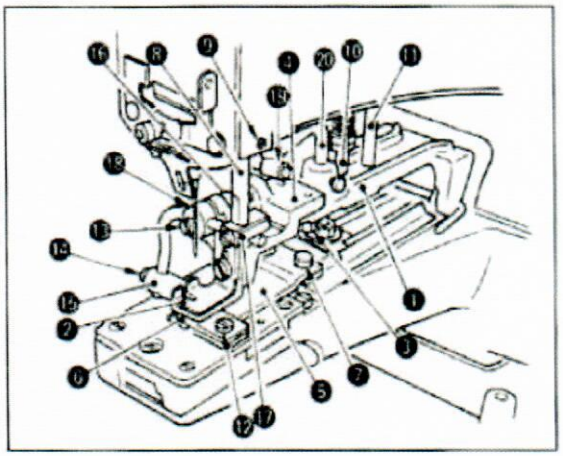
Attachment for the second process of wrapped-around buttons



Use	Flat buttons			Snaps
	Large-size	Medium-size	General	
	A	B	C	D
Schematic drawing				
Remarks	Button size A;3 to 5 mm B: ϕ20 to ϕ28 mm	Button size A;3 to 5 mm B: ϕ12 to ϕ20 mm	Button diameter 6mm Thickness 6.5mm Width 3, 2.5mm	Snap size A:8mm

Use	纽扣绕线用 Wrapped-around buttons		Metal buttons		Labels
	Frist process	Second process	General	Stay button	
	E	F	G	H	I
Schematic drawing					
Remarks	Thread shank height A:5.5 mm			Thread shank height A:5.5 mm	Stitch width 3 to 6.5mm

Attachments for shank buttons(Pearl buttons)



(INSTLLATION)

Remove both the button clamp mechanism assem -bly and the feed plate from the machine and install attachment ❶ in place.Loosen screws ❸ and adjust button clamp bracket ❹ to permitthe needle to come down in the middle of the needie slot in shank button adaptor ❷ .Attach button clamp feed plate ❺ using screws ❼ in the way that it permits the needle to come down in the middle of the needle slot in feed piate ❻ .Insert the top end of button clamp stud ❽ into an opening in the jaw of the machine arm and fasten it by screw ❾ .

WARNING

To protect against possible personal injure due to abrupt start of the machine ,be sure to the start the following work after turning the power off and ascertaining that the motor is at rest

(INSTALLATION)

Remove the button clamp mechanism assembly,button clamp pressure adjusting bar and feed plate from the machine and install attachment for the second processof wrapped-around buttons ❶ .When you install a Z035 attachment,you must

Remove also the L-shaped lifting rod. Lnsert moving knife push-back spring❸,washer❹,cushion❺ and washer❺in Spring Guide shaft❷ in this order. Make certain that the stop-motion Mechanism has completely engaged and install The attachment assembly in place in the way that cush-ion comes in close contact with the surface of the machine arm without play.

(ADJUSTMENT AND OPERATION)

1)Loosen screw❻ and adjust the thread shank length by moving guide (large) ❼ and guide(small) ❽ in line with the point of needle entry.

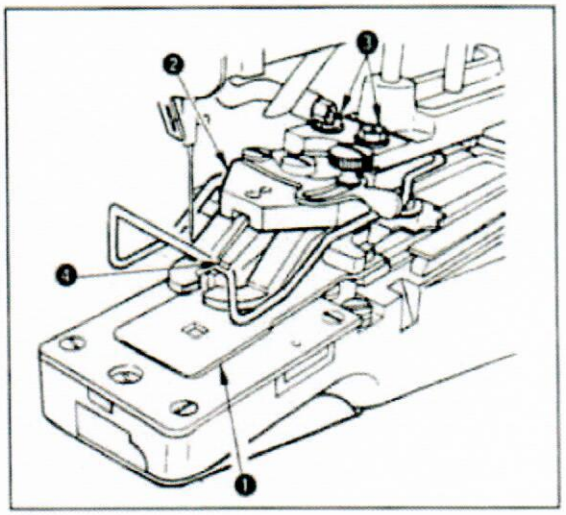
2)Set a button (tilt it slightly for easy insertion)and pass the thread as the arrow shows.

3)Set the lengthwise feed to"0".

WARNING

To protect against possible personal injure due to abrupt start of the machine ,be sure to the start the following work after turning the power off and ascertaining that the motor is at rest

Attachment for snaps



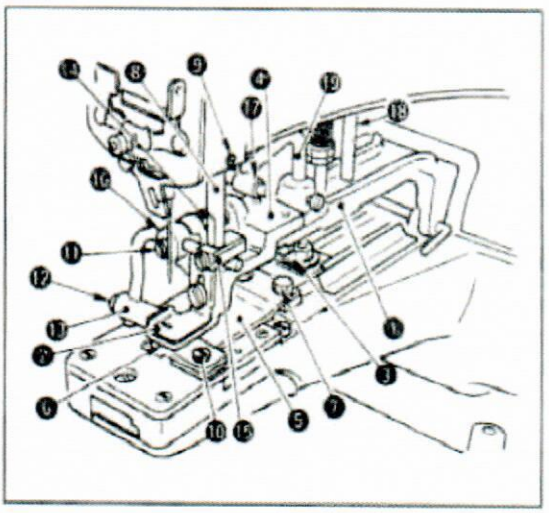
(INSTALLATON)

Remove the button clamp mechanism assembly and the feed plate. Set both the crosswise feed and lengthwise feed graduated plates to"4mm". Install snap clamp feed plate❶ in the way that the needle drops evenly at four corners of its square opening. Install snap attachment assembly ❷ on the machine, place a snap on the snap clamp jaw levers and make sure that the needle drops accurately in each hole in the snap.if necessary.Loosen hex head screws❸and Adjust the position accurately. Lastly, make sure that the concave section on the bottom face of snap clamp slide guide ❹ accurately matches the convex section on snap clamp feed plate❶.

WARNING

To protect against possible personal injure due to abrupt start of the machine ,be sure to the start the following work after turning the power off and ascertaining that the motor is at rest

Attachment for metal buttons



(INSTALLATION)

Remove both the button clamp mechanism assem-bly and the feed plate from the machine and install attachment ❶ in place.Loosen screws ❸ and adjust button clamp bracket ❹ to permit the needle to come down in the middle of the needle slot in metal button adaptor ❷ . Attach button clamp feed plate ❺ using screws ❼ in the way that it permits the needle to come down in the middle of the needle slot in feed plate .Insert the top end of button clamp stud ❽ into an opening in the jaw of the machine arm and fasten it by screw ❾.

(ADJUSTMENT AND OPERATION)

1)Looen screw ⓾,let feed plate ❻ recede 1.0 to 1.5mm form the left end of button clamp jaw lever ❷ and retighten screw ⓾ .

2)Set a button in piace,loosen screws ⓫ and ⓬ and align metal button holding clamp ⓭ with the center of the button.

3)metal button holding clamp ⓭ must give proper pressure to the button so that the button stays steadily in position while being sewn.Loosen a setscrew in thrust coolar ⓮ and rotate the thrust collar until metal button holding clamp ⓭ provides proper pressure.

4)You may fix button clamp block ⓯ in a convenient position for operation.

CAUTION: 1.When you fix the thrust collar, ensure that button clamp rotating shaft ⓰ does not play axially in its bracket.

2.Adjust lifting hook ⓲ and stopper pin ⓳ so that L-shaped liting rod roller ⓱ does not come in contact with button clamp bracket ❹ .

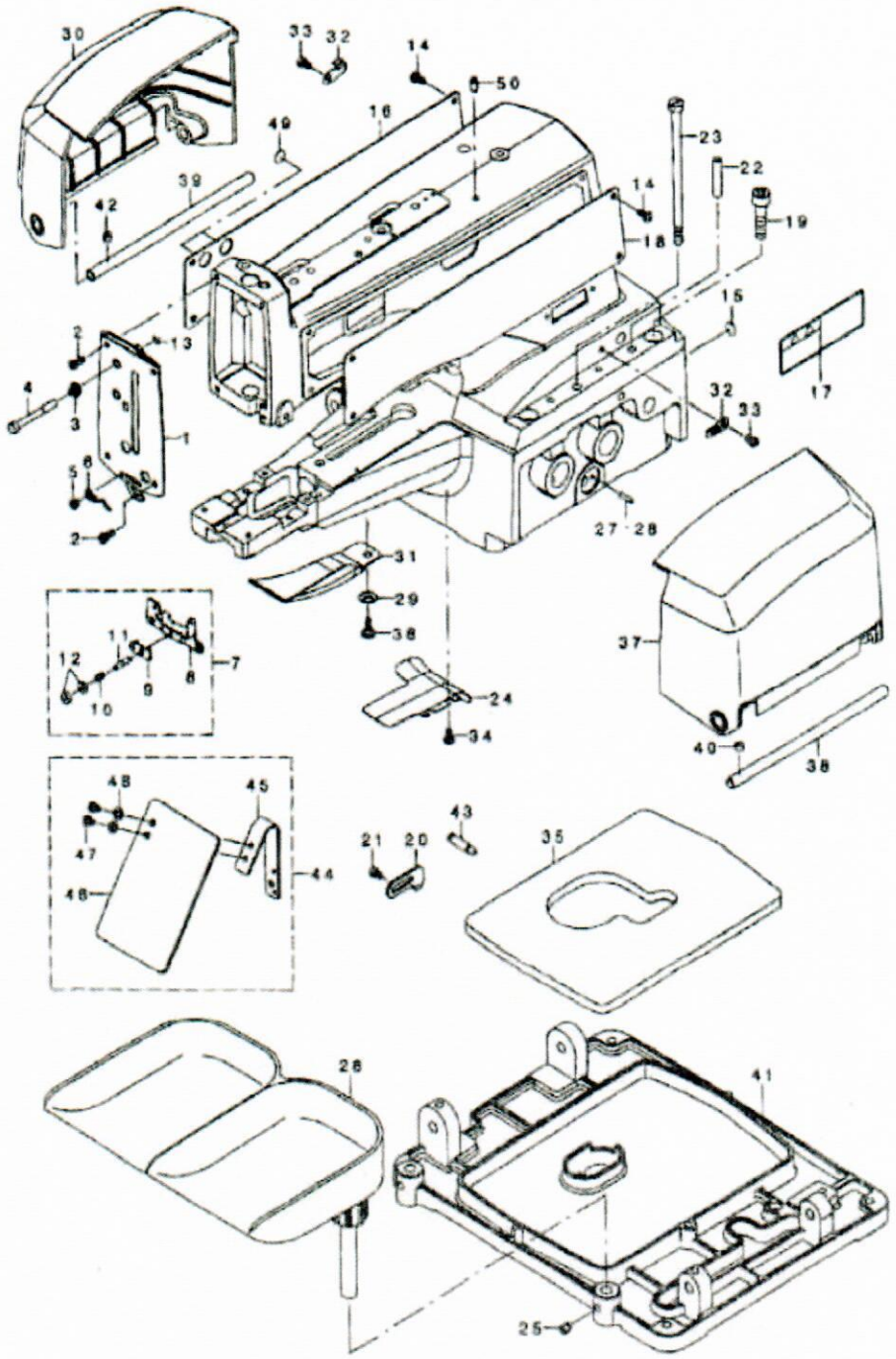
WARNING

To protect against possible personal injure due to abrupt start of the machine ,be sure to the start the following work after turning the power off and ascertaining that the motor is at rest

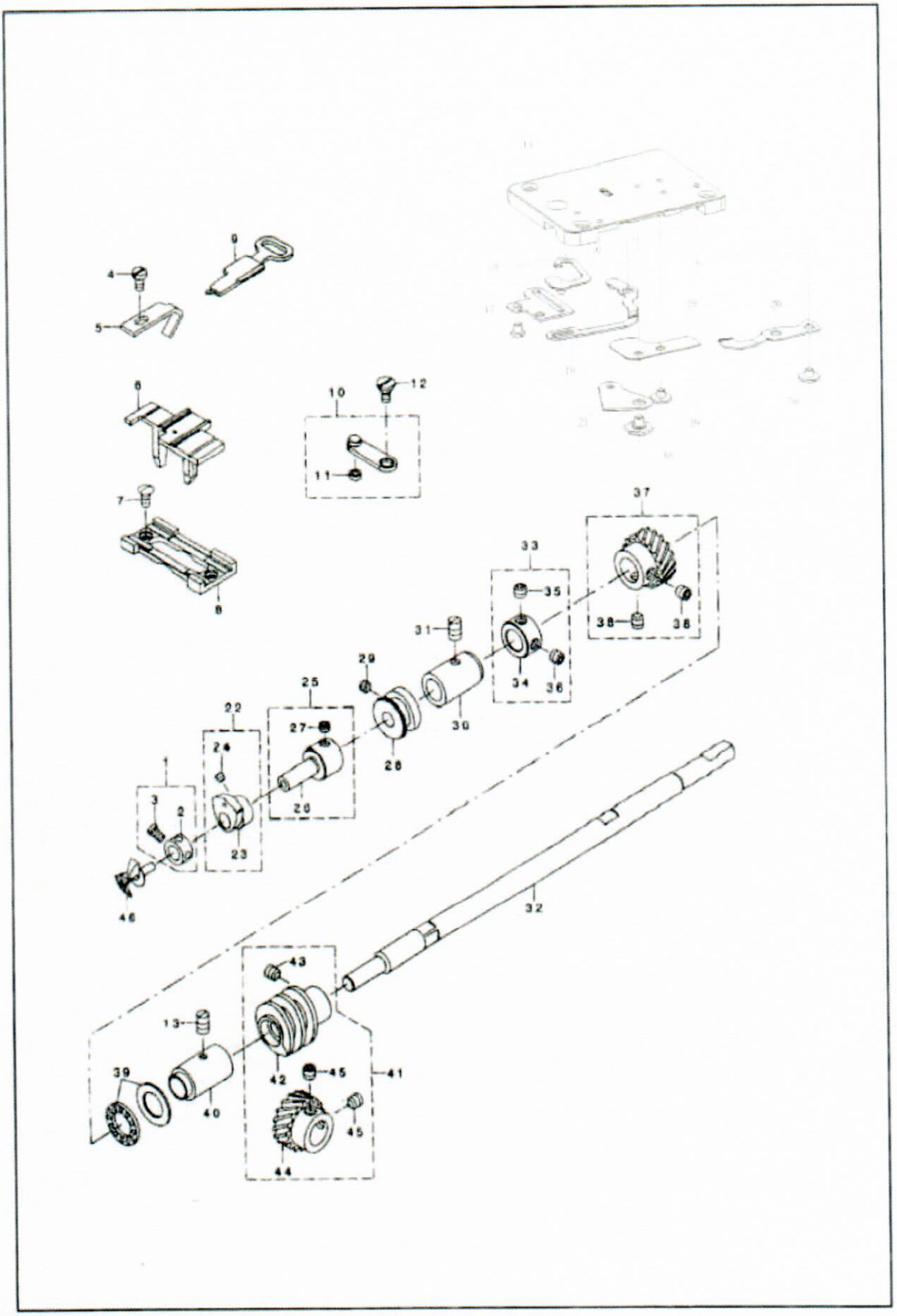
Motor pully and belt

HZ	Rpm	Motor pully part Number	mm
50	1500		ϕ 76
	1300		ϕ 64.5
60	1500		ϕ 64.5
	1300		ϕ 57

ARM & MISCELLANEOUS COVERS COMPONENTS

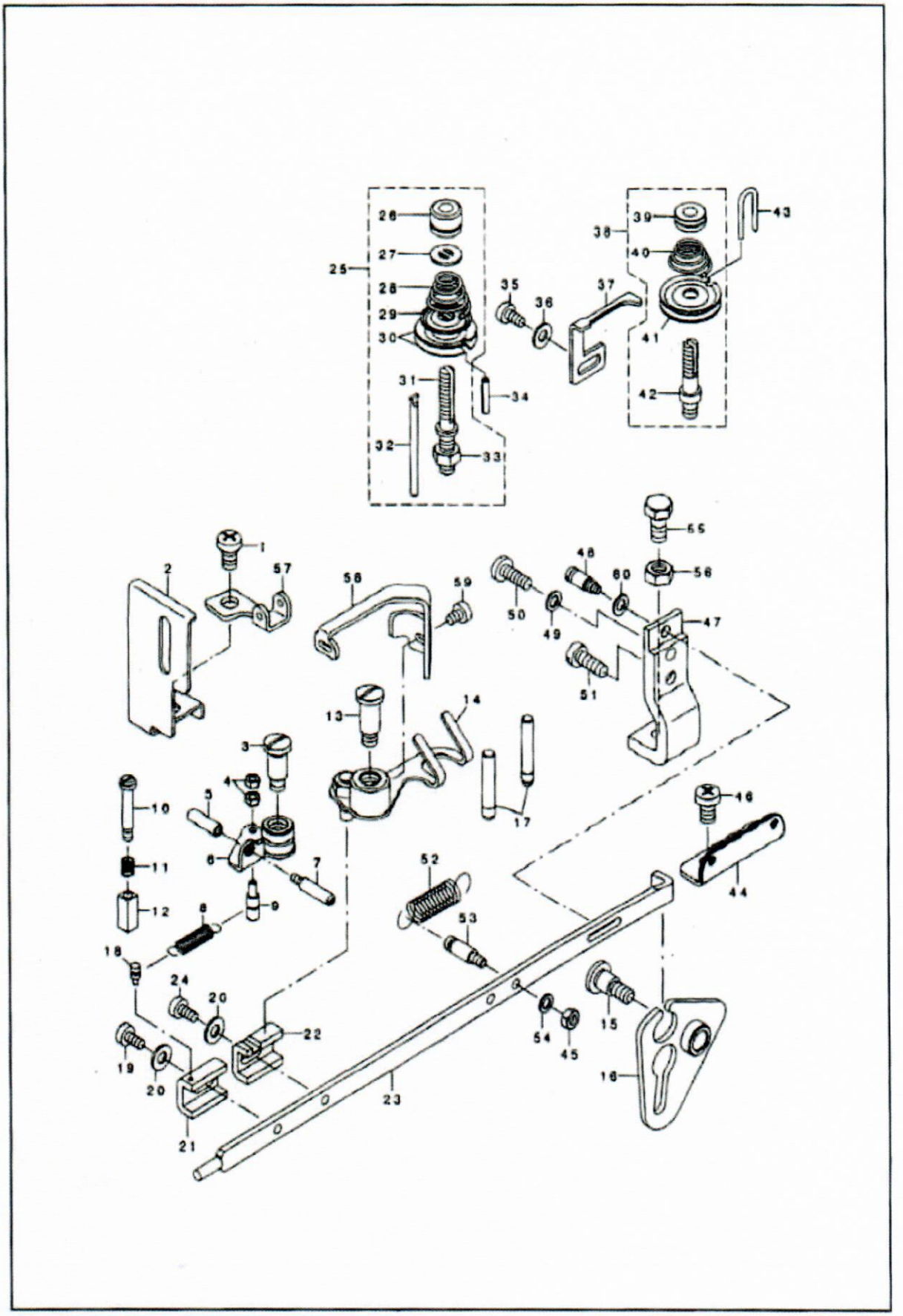


LOOPER SHAFT MECHANISM COMPONENTS



REF No	RART NO	DESCRIPTION	Q'TY
1	85.3-1-00	THRUST COLLAR ASM	1
2	85.3-1	THRUST COLLAR D=7.94 W=7	1
3	90.4-14	SCREW 9/64"X40 L=6.1	1
4	85.3-2	SCREW	1
5	85.3-3	NEEDLE GUARD	1
6	85.3-4	POSITIONING FINGER YOKE SLIDE	1
7	85.3-5	SCREW M4 L=9	2
8	85.3-6	YOKE SLIDE INSERT	1
9	85.3-7	YOKE SLIDE	1
10	85.3-8	ASSY LOOP POSITIONING FINGER L	1
11	85.3-8-2	LOOP POSITIONING FINGER CAM RO	1
12	85.3-10	HINGE SCREW D=6.35 H=2.4	1
13	85.3-11	SCREW	1
14	85.3-12-1	THROAT PLATE	1
15	85.3-12-8	THREAD BIND PLATE GUIDE	1
16	85.3-12-3	THREAD BIND PLATE ASM	1
17	85.3-12-9	SCREW	1
18	85.3-12-10	LINK	1
19	85.3-12-3	THREAD BIND SUPPORT PLATE	2
20	85.3-12-4	COUNTER KNIFE	1
21	85.3-12-6	MOVING KNIFE	1
22	85.3-13-00	ASSY LOOP POSITIONING FINGER C	1
23	85.3-13	LOOP POSITIONING FINGER CAM	1
24	40.3-30	SCREW 11/64"X40 L=3.5	2
25	85.3-14-00	ASSY CAM AND LOOPER SLEEVE	1
26	85..3-14	CAM AND LOOPER SLEEVE	1
27	43.5-26	SCREW 15/64"X28 L=4.0	2
28	85.3-15	LOOP POSITIONING FINGER CAM RE	1
29	40.2-34	SCREW 11/64"X40L=2.8	2
30	85.3-16	LOOPER SHAFT BUSHING FRONT	1
31	85.3-11	SCREW	1
32	85.3-17	LOOPER SHAFT	1
33	85.3-18-00	THRUST COLLER ASM	1
34	85.3-18	THRUST COLLER D=11.11 W=10	1
35	95.3-13	SCREW 1/4"X40 L=5	1
36	85.3-19-00	SCREW 1/4"X40 L=5	1
37	85.3-19	LOOPER SHAFT DRIVEN GEAR ASM	1
38	90.2-36	SCRE 1/4"X40 L=6	2
39	85.3-20	THRUST BALL BEARING	1
40	85.3-21	LOOPER SHAFT BUSHING REAR	1
41	85.3-22-00	WORM WHEEL ASM	1
42	85.3-22	WORM	1
43	85.3-23	SCREW 1/4"X40 L=7.0	2
44	85.3-24	CAM SHAFT DRIVEN GEAR	1
45	90.2-36	SCREW 1/4"X40 L=6	2
46	85.3-25	LOOPER	1
47	85.3-26	SCREW M4 L=9	3
48	85.3-12-7	HINGE SCREW D=6 H=0.85	1
49	85.3-12-5	SCREW	3

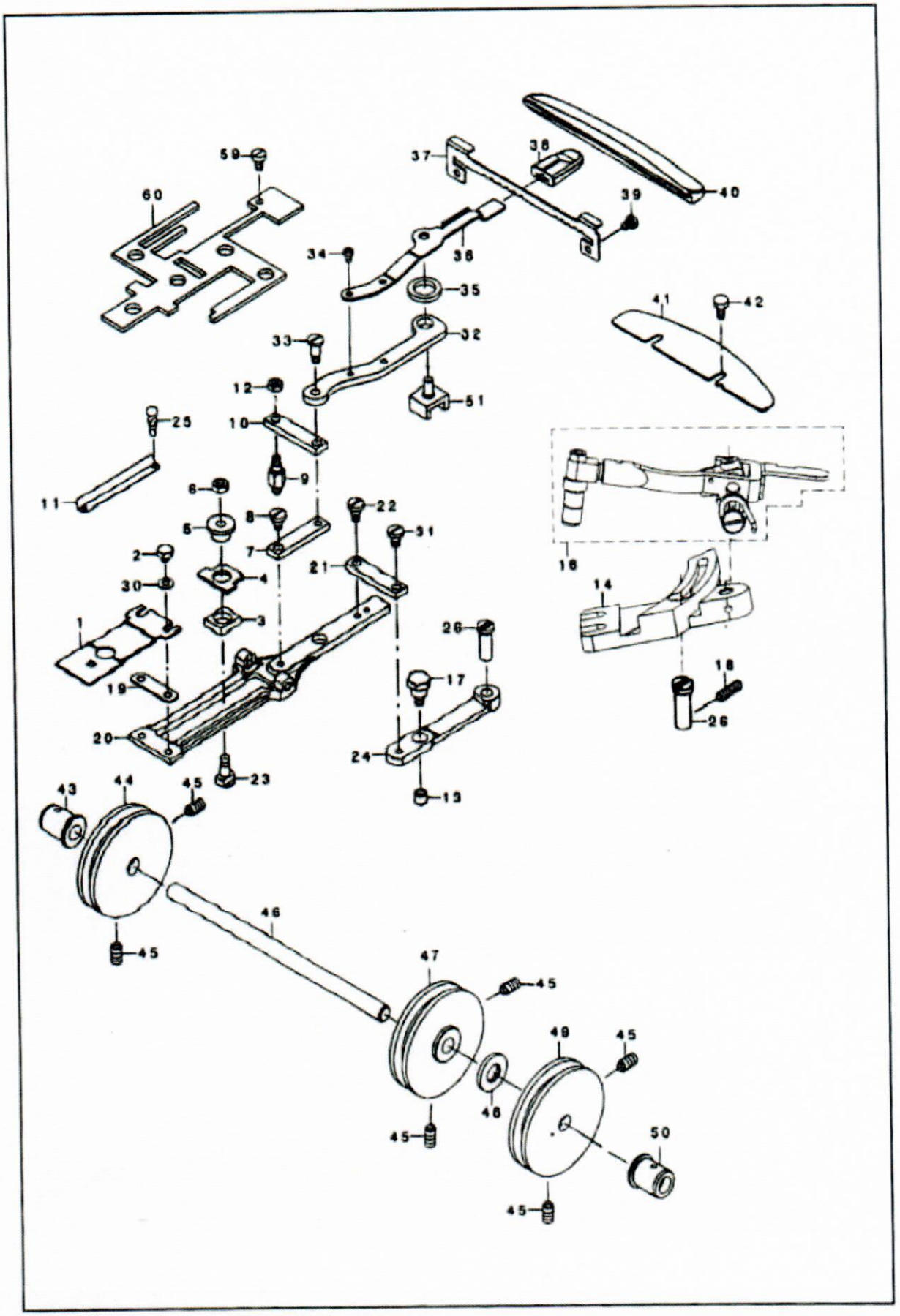
NIPPER & THREAD TENSION PARTS COMPONENTS



REF No	RART NO	DESCRIPTION	Q'TY
1	85.4-1	SCREW M6 L=12	1
2	85.14-5	NEEDLE BAR GUARD	1
3	85.4-3	SHOULDER SCREW	1
4	85.4-4	NUT	2
5	85.4-5	NUT	1
6	85.4-6	NIPPER COMPL	1
7	85.4-7	LOOPER SHAFT BUSHING REAR	1
8	85.4-8	NIPPER BAR BLOCK SPRING	1
9	85.4-9	NIPPER BAR BAR BLOCK SPRING SCREW	1
10	85.4-10	HINGE SCREW D=4 H=20	1
11	85.4-11	NIPPER SLIDE BLOCK SPRING	1
12	85.4-12	NIPPER BLOCK	1
13	85.4-13	SHOULDER SCREW D=7.94 H=15	1
14	85.4-14	THREAD PULL OFF LEVER ASM	1
15	85.4-15	SHOULDER SCREW D=7.94 H=8	1
16	85.4-16	NIPPER BAR ACTUATING LEVER ASM	1
17	85.4-17	THREAD GUIDE PIN	2
18	85.4-18	NIPPER BAR BLOCK SPRING PIN	1
19	85.3-2	SCREW	1
20	90.1-26	WASHER	2
21	85.4-19	NIPPER BAR BLOCK	1
22	85.4-20	TENSION LEVER ROCKING PIECE	1
23	85.4-21	NIPPER BAR	1
24	85.3-2	SCREW	1
25	85.4-22	TENSION POST ASM NO.2	1
26	85.4-22-1	TENSION NUT	1
27	30.1-28-2	ROTATION STOPPER	1
28	85.4-22-2	THREAD TENSION SPRING	1
29	85.4-22-3	THREAD TENSION DISK PRESSER	1
30	85.4-22-4	THREAD TENSION DISK NO.1	2
31	85.4-22-5	TENSION POST NO.2	1
32	85.4-22-6	TENSION RELEASE PIN	1
33	95.13-6	NUT M6	1
34		SPRING PIN 3X16	1
35	85.4-38	SCREW	1
36	90.1-46-2	WASHER	1
37	85.4-23	THREAD TENSION RELEASING LEVER	1
38	85.4-24	ASSY THREAD TENSION NO.1	1
39	85.4-24-1	THREAD TENSION NUT	1
40	85.4-24-2	FIRST THREAD TENSION SPRING	1
41	85.4-22-4	THREAD TENSION DISK NO.1	2
42	85.4-24-3	THREAD TENSION POST NO.1	1
43	85.4-25	THREAD GUIDE	1
44	85.4-26	THREAD GUIDE NO.1	1
45	85.4-27	NUT M4	1
46	85.4-1	SCREW M6 L=12	1
47	85.4-28	NIPPER BAR BEARING BLOCK	1

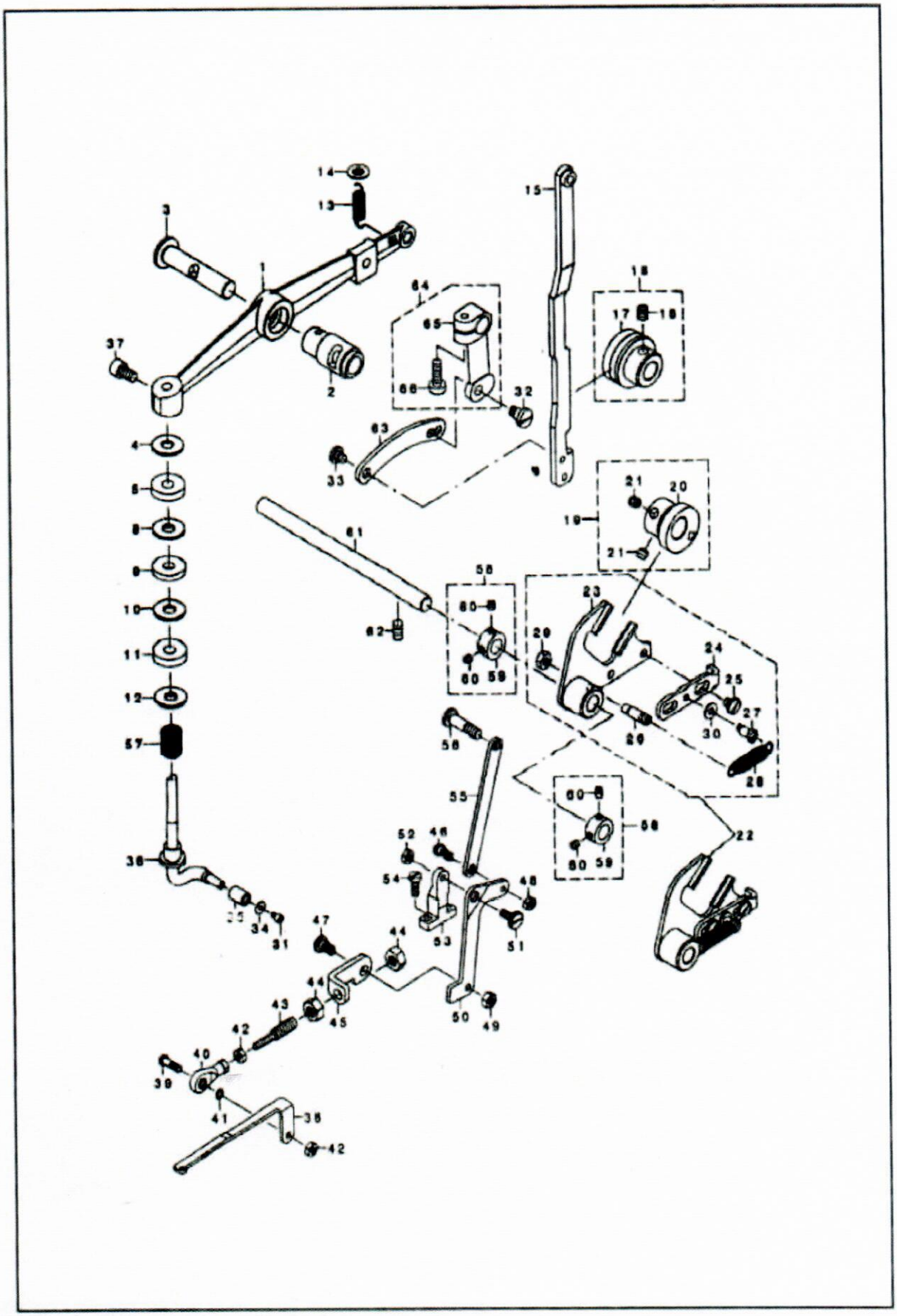
REF No	RART NO	DESCRIPTION	Q'TY
48	85.4-29	ADJUSTING SCREW	1
49	85.4-30	WASHER 5.5X10X0.8	1
50	85.4-31	SCREW M5 L=14	1
51	85.4-32	SCREW	1
52	85.4-33	THREAD TENSION SPRING	1
53	85.4-34	NIPPER BAR SPRING SCREW	1
54	90.3-13-11	WASHER	1
55	85.4-35	SCREW M6 L=14	1
56	95.13-6	NUT M6	1
57	85.4-36	THREAD GUIDE	1
58	85.4-37	LEVER	1
59	85.4-24	SCREW M4 L=6	1
60	95.10-7	WASHER 5X10.5X1	1

FEED PLATE COMPONENTS



REF No	RART NO	DESCRIPTION	Q'TY
1	85.5-1	FEED PLATE SMALL BUTTON	1
2	85.5-2	SCREW 3/16"X28 L=6	2
3	85.5-3	LNDICATOR PIN BEARING BLOCK	1
4	85.5-4	CROSSWISE FEED INDICATION	1
5	85.5-5	CROSSWISE FEED INDICATION PIN	1
6	95.13-6	NUT M6	1
7	85.5-6	SLIDE PLATE CONNECTING LINK	1
8	85.5-7	HINGE SCREW D=6.35 H=4.8	1
9	85.5-8	STUD	1
10	85.5-9	INTERMEDI CONNETING LINK	1
11	85.5-10	CROSSWISE FEED GRADVATED PLATE	1
12	85.5-11	NUT M5	1
13	85.5-12	CAM ROLL	
14	85.5-58	FEED LEVER	
16	85.5-60		
17	85.5-13	CAM ROLL SCREW STUD	
18	85.5-14	SCREW M6X12	2
19	85.5-15	SPACER PLATE	2
20	85.5-16	FEED PLATE	1
21	85.5-9	INTERMEDI CONNECTING LINK	1
22	85.5-7	HINGE SCREW D=6.35 H=4.8	1
23	85.5-18	HINGE SCREW FOR CROSSWISE FEED	1
24	85.5-19	CROSSWISE FEED LEVER	1
25		RIVET	1
26	85.5-20	FEED STUD	2
31	85.5-40	SHOULDER SCREW	3
32	85.5-58	FEED LEVER	
33	85.5-34	SHOULDER SCREW	1
34	85.2-33-3	SCREW	1
35	85.5-44	OIL RETAINING FELT	1
36	85.5-30	HANDLE AND INDICATOR SPRING	1
37	85.5-28	PLATE BASE	1
38	85.5-32	KNOB	2
39	85.5-31	SCREW	1
40	85.5-29	GRADATE PLATE	1
41	85.5-26	FEED KNOB GUIDE PLATE	
42	85.5-27	SCREW	
43	85.5-37	CAM SHAFT BUSHING LEFT	
44	85.5-38	FEED CAM (X)	
45	85.5-41	SCREW	
46	85.5-35	CAM SHAFT	
47	85.5-39	FEED CAM A(Y)	
48	85.5-42	WASHER	
49	85.5-36	FEED CAM (Y)	
50	85.5-43	CAM SHAFT BUSHING RIGHT	
51	85.5-23	LENGTHWISE FEED LEVER SLIDE	

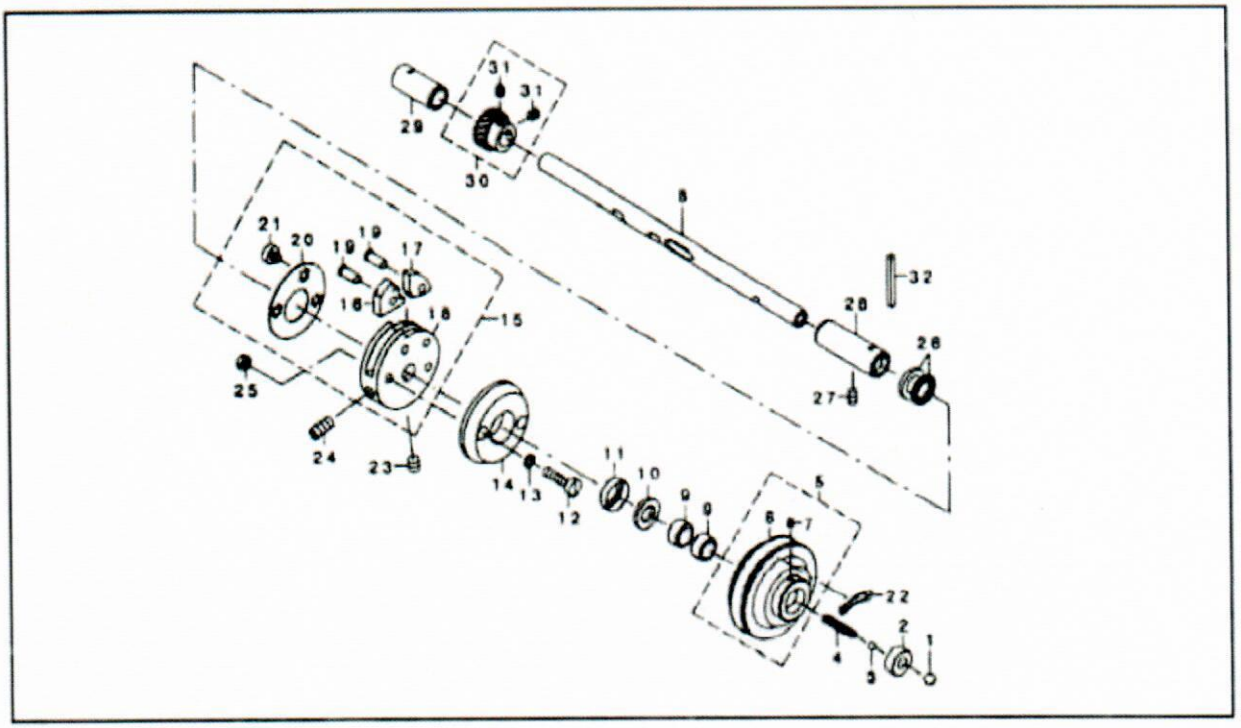
BUTTON CLAMP LIFTER COMPONENTS



REF No	RART NO	DESCRIPTION	Q'TY
1	85.6-1	LIFTING LEVER	1
2	85.6-2	BUSHING	1
3	85.6-3	NEEDLE BAR LEVER	1
4	85.6-4	WASHER 8.5X18X1.2	1
5	85.6-5	CUSHION	1
8	85.6-4	WASHER	1
9	90.9-20	WASHER 7.5X19X1.5	1
10	90.9-20	WASHER 7.5X19X1.5	1
11	85.6-5	CUSHION	1
12	85.6-7	WASHER 7X20X3.5	1
13	85.6-8	SPRING	1
14	85.6-9	WASHER	1
15	85.6-10	BUTTON CLAMP LIFTING LINK	1
16	85.6-11-00	ASSY SLIDING ROLLER	1
17	85.6-11	SLIDING ROLLER	1
18	85.2-30	SCREW M6 L=6	1
19	85.6-12-00	ECCENTRIC CAM	1
20	85.6-12	ECCENTRIC CAM	1
21	85.6-13	SCREW	2
22	85.6-14	BUTTON CLAMP LIFTING LINK SET	1
23	85.6-14-1	BUTTON CLAMP LIFTING LINK	1
24	85.6-14-2	LIFTING HOOK	1
25	85.6-14-3	SHOULDER SCREW D=6.35 H=2.7	2
26	85.6-14-4	TENSION SPRING RACK B	1
27	85.6-14-5	SHOULDER SCREW D=5 H=7.2	1
28	85.6-14-6	LIFTING HOOK SPRING	1
29	85.5-11	NUT M5	1
30	85.6-14-7	WASHER	1
31	85.6-15	SCREW M3X0.5 L=4	1
32	85.5-7	HINGE SCREW D=6.35 H=4.8	1
33	90.4-31	HINGE SCREW D=6.35 H=2.1	1
34	85.6-16	WASHER M3	1
35	85.6-17	L TYPE LIFTING BAR ROLLER	1
36	85.6-18	BUTTON CLAMP LIFTING ROD A	1
37	90.8-16	SCREW M6 L=10	1
38	85.6-19	CONNECTING LINK FRONT	1
39	85.6-20	JOINT STUD	1
40	85.6-21	FEED ADJUSTING JOINT	1
41	85.6-22	WASHER 5.1X7.5X0.5	1
42	85.5-11	NUT M5	.1
43	85.6-23	CONNECTING SCREW	2
44	85.6-24	NUT M8 TYPE	1
45	85.6-25	CONNECTING LINK REAR	2
46	85.6-26	HINGE SCREW D=6.35 H=3.2	1
47	90.7-19-2	HINGE SCREW D=7.94 H=4	1
48	40.6-32	NUT 13/16X32	1
49	43.5-12	NUT 15/64"X28	1
50	85.6-27	THREAD TRIMMING LEVER	1

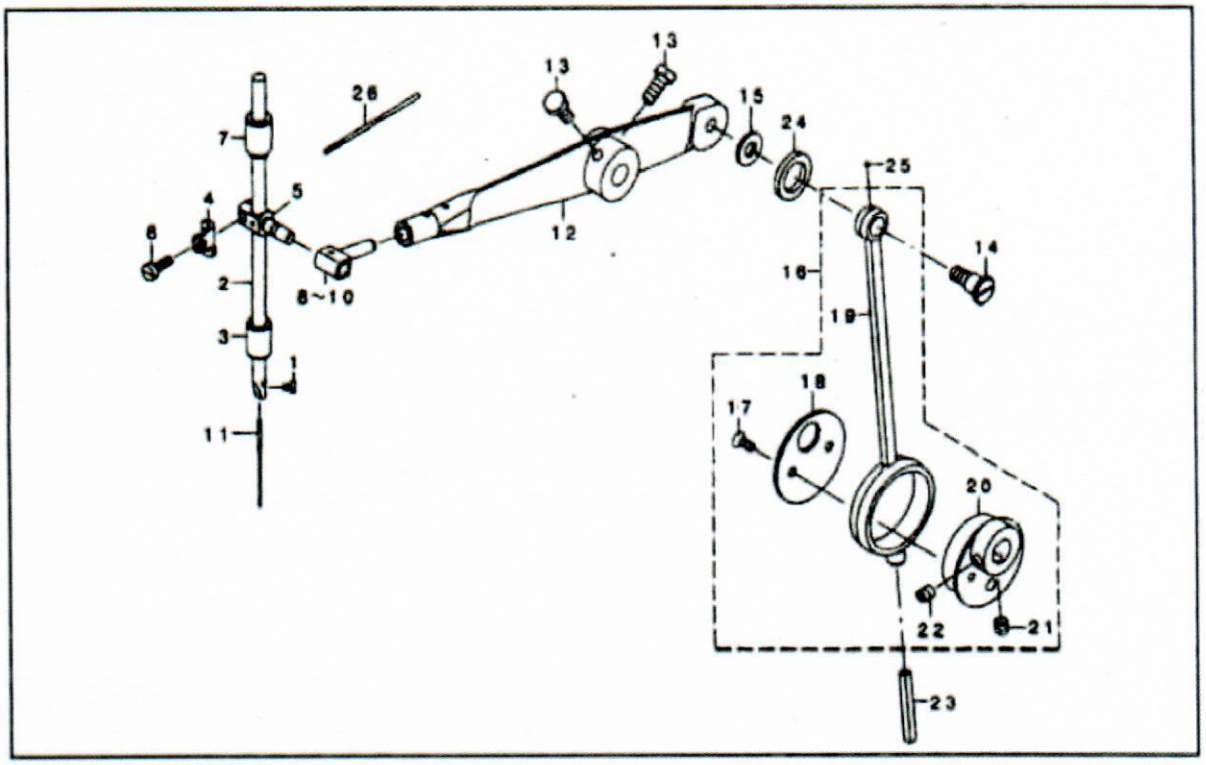
REF No	RART NO	DESCRIPTION	Q'TY
51	85.6-28	SHOULDER SCREW D=6.35 H=3.1	1
52	35.5-11	NUT M5	1
53	85.6-29	THREAD TRIM LEVER BASE	1
54	85.4-31	SCREW M5 L=14	2
55	85.6-30	THREAD TRIMMING LINK	1
56	85.6-31	HINGE SCREW D=6.35 H=13.2	1
57	85.6-32	SPRING	1
58	85.6-33-00	THRUST COLLAR ASM D=9.5 W=8	2
59	85.6-33	THRUST COLLAR D=9.5 W=8	1
60	40.3-30	SCREW 11/64"X40 L=3.5	2
61	85.6-34	LEVER SHAFT	1
62	85.3-11	SCREW	2
63	85.6-35	LIFTING LINK	1
64	85.6-36-00	LIFTING PLATE GUIDE ROD ASM	1
65	85.6-36	LIFTING PLATE GUIDE ROD	1
66	85.6-37	SCREW M5 L=16	1

NEEDLE DRIVING PULLEY SHAFT COMPONENTS



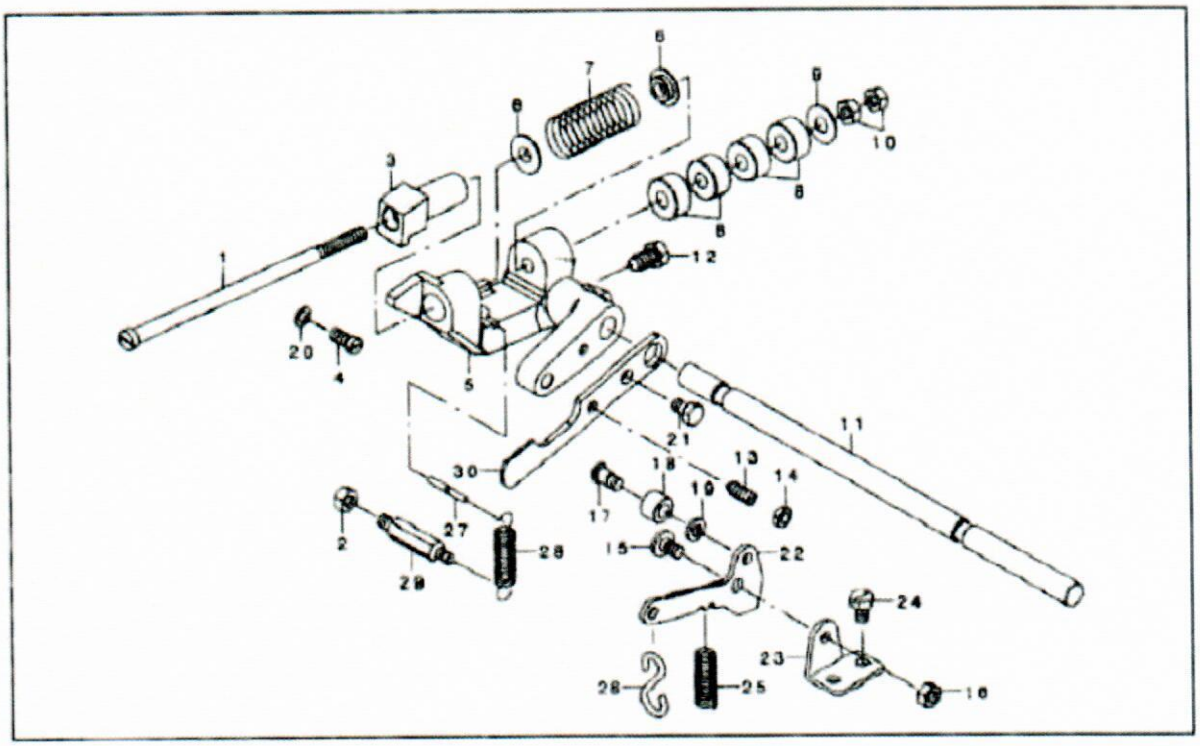
REF No	RART NO	DESCRIPTION	Q'TY
1		BALL LARGE	1
2	85.7-1	PULLEY INSERT	1
3		BALL SMALL	1
4	85.7-2	SPRING	1
5	85.7-3-00	DRIVING PULLEY ASM.	1
6	85.7-3	DRIVING PULLEY	1
7	85.7-4	SCREW M4 L=6	2
8	85.7-5	NEEDLE DRIVING PULLEY SHAFT	1
9		NEEDLE BEARING	2
10	85.7-6	GREASE RTETAINING WICK	1
11	85.7-7	RETAINING WASHER	1
12	85.7-8	SCREW M6 L=23.5	2
13	85.7-9	WASHER 6.2X9.5X1	2
14	85.7-10	NEEDLE DRIVING PULLEY CLUTCH D	1
15	85.7-13-00	STOP MOTION DISC ASM	1
16	85.7-11	STOP MOTION DISC LATCH A	1
17	85.7-12	STOP MOTION DISC LATCH B	1
18	85.7-13	STOP MOTION DISC	1
19	85.7-14	STOP MOTION PAWL SHAFT	2
20	85.7-15	STOP MOTION DISC WASHER	1
21	85.7-16	SCREW M6 L=4.5	1
22	85.7-17	DIRECTION LABEL	1
23	85.7-18	SCREW M8X8	1
24	85.7-19	SCREW M8 L=17	1
25	85.7-20	NUT M6	2
26	85.7-21	THRUST BALL BEARING	1
27	85.3-11	SCREW	1
28	85.7-22	PULLEY SHAFT BUSHING RIGHT	1
29	85.7-23	PULLEY SHAFT BUSHING LEFT	1
30	85.7-24	DRIVING GEAR	1
31	85.7-25	SCREW 1/4 "X40 L=6	1

NEEDLE BAR DRIVING MECHANISM COMPONENTS



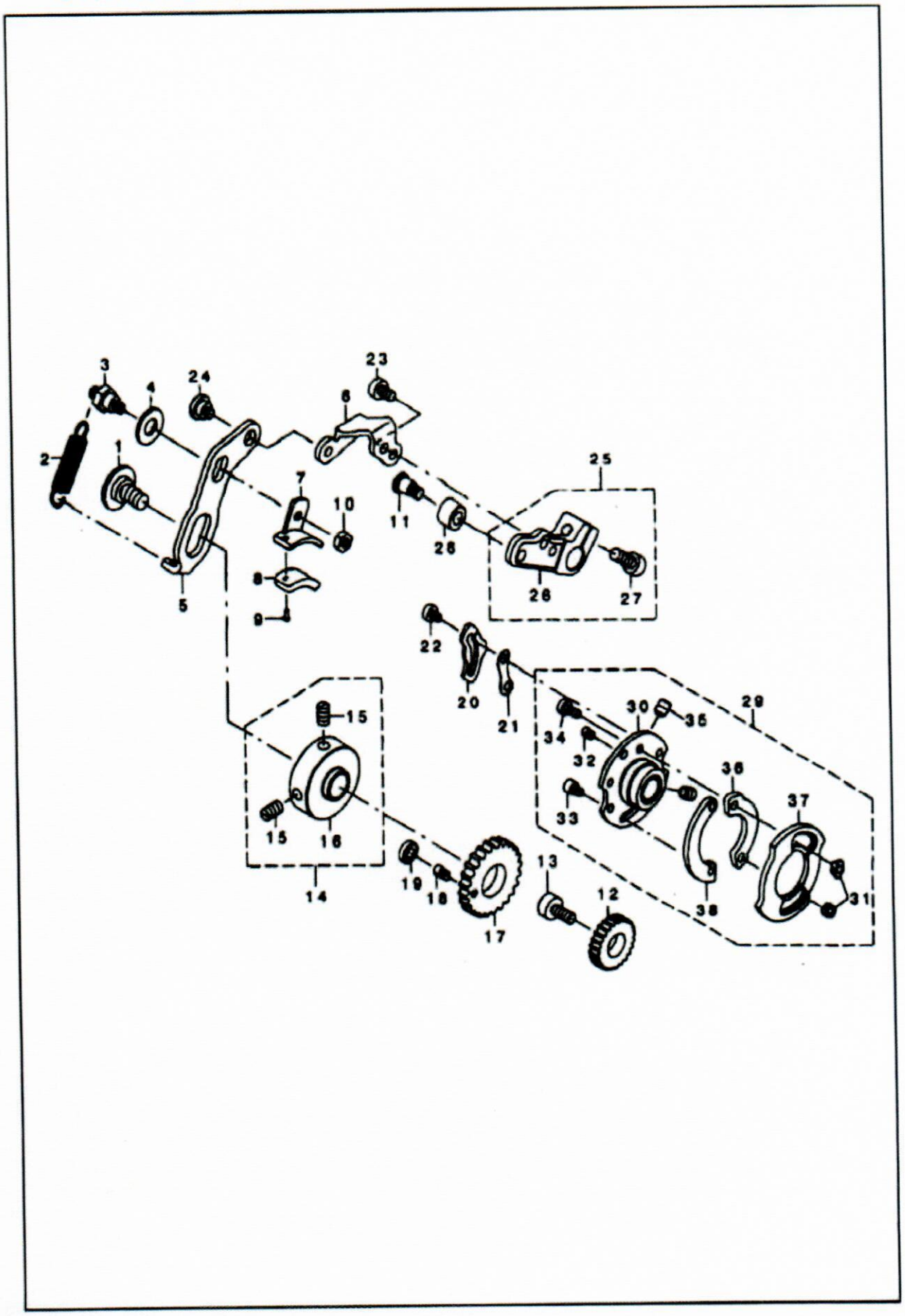
REF No	RART NO	DESCRIPTION	Q'TY
1	10.2-44	SCREW 1/8" X44 L=4.5	1
2	85.8-1	NEEDLE ROD	1
3	85.8-2	NEEDLE BAR BUSHING LOWER	1
4	85.8-3	NEEDLE BAR BALANCE	1
5	85.8-4	NEEDLE BAR CLAMP	1
6	85.8-5	SCREW M4 L=12	1
7	85.8-6	NEEDLE BAR BUSHING UPPER	1
10	85.8-7	NEEDLE BAR SLIDE BLOCK	1
11		NEEDLE TQX1 16#	1
12	85.8-8	NEEDLE BAR DRIVING LEVER	1
13	85.4-35	SCREW M6 L=14	2
14	85.8-9	SHOULDER SCREW D=9.53 H=8	1
15	85.8-10	WASHER	1
16	85.8-13-00	CRANK ROD ASM	1
17	30.1-32	SCREW 11/64 "X40 L=8.5	2
18	85.8-11	THRUST HOLDER	1
19	85.8-12	CRANK ROD	1
20	85.8-13	ECCENTRIC CAM	1
21	90.2-36	SCREW 1/4" X40 L=6	1
22	85.8-14	SCREW 1/4 "X40 L=8.5	1
23	85.8-15	OIL WICK	1
24	85.5-44	OIL RETAINING FELT	1
25	85.8-17	OIL WICK	1
26	85.8-18	OIL WICK	1

STOP MOTION MECAHNISM COMPONENTS



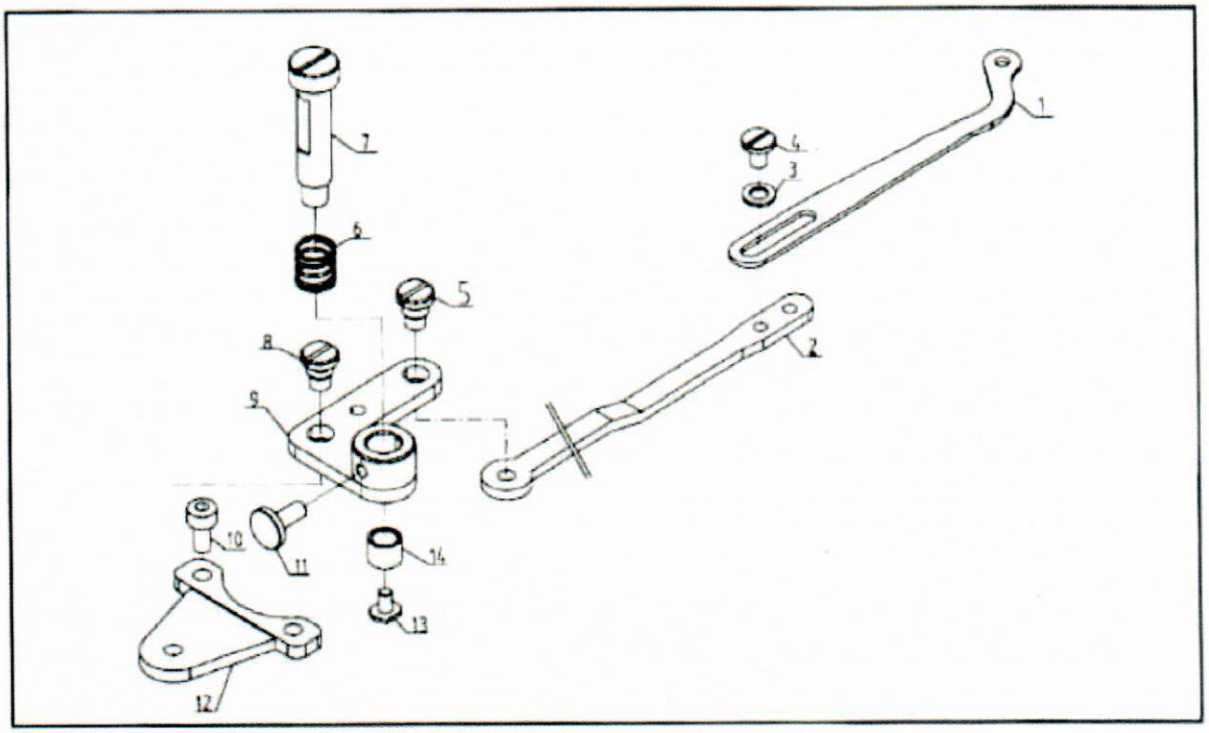
REF No	RART NO	DESCRIPTION	Q'TY
1	90.9-15	STOP MOTION PLUNGER	1
2	85.7-20	NUT M6	1
3	85.9-1	CROSSING HOOK	1
4	85.9-2	SCREW M6 L=11	1
5	85.9-3	STOP MOTION PLUNGER LEVER	1
6	90.9-19	WASHER	2
7	85.9-4	STOP MOTION SPRING	1
8	90.9-17	RUBBER CUSHION	4
9	85.9-5	WASHER	1
10	40.3-14	NUT 9/32" X28	2
11	85.9-6	STOP MOTION SHAFT	1
12	85.9-7	SCREW	1
13	85.9-8	SCREW 15/64X28 L=15	1
14	43.5-12	NUT 15/64X28	1
15	85.9-9	SHOULDER SCREW D=6.8 H=2.7	1
16	95.13-6	NUT M6	1
17	85.9-10	SHOULDER SCREW D=7.14 H=4	1
18	85.9-11	STITCH ADJUSTING ROLLER	1
19	85.9-12	WASHER 6.1X11X2	1
20	85.9-13	WASHER	1
21	85.9-14	SCREW M6 L=10	1
22	85.9-15	STOP MOTION TRIP LEVER	1
23	85.9-16	STOP MOTION TRIP LEVER BARACKET	1
24	85.9-17	SCREW M6 L=12	2
25	85.9-18	SPRING	1
26	43.8-10	S SHAPED HOOK	1
27	85.9-20	STOP MOTION LEVER SPRING PIN	1
28	85.9-21	STOP MOTION LEVER SPRING	1
29	85.9-22	SCREW STUD	1
30	85.9-23	PRESSURE APPLYING LEVER	1

STITCH SELECTING PARTS COMPONENTS



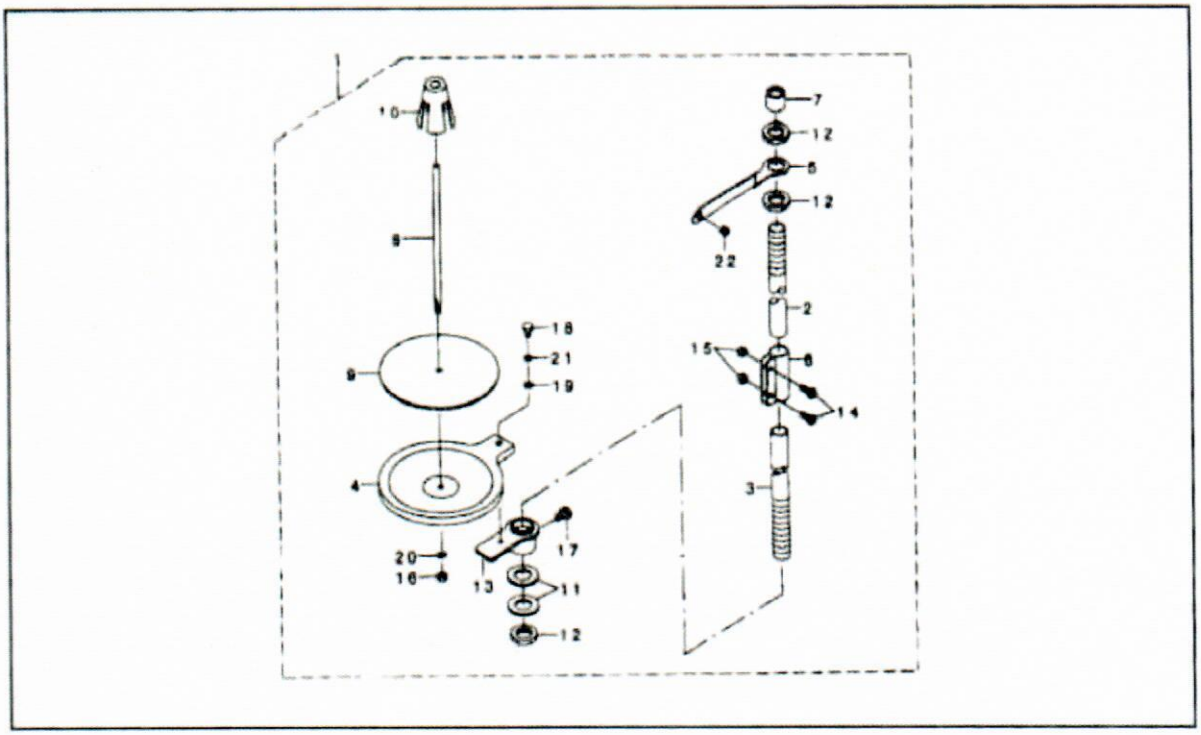
REF No	RART NO	DESCRIPTION	Q'TY
1	85.10-1	SHOULDER SCREW D=12.7 H=3.4	1
2	85.10-2	SPRING FOR FRICTION PLATE	1
3	85.10-3	FRICTION PLATE ROTATING SHAFT	1
4	85.10-4	WASHER 8.5X18X1.6	1
5	85.10-5	SPEED SLOWER LEVER	1
6	85.10-6	FITING PLATE	1
7	85.10-7	FRICTION PLATE HOLDER	1
8	85.10-8	SPEER SLOWER FRICTION PLATE	1
9		POSITIONING PIN	2
10	40.7-7	NUT 11/64"X40	1
11	85.9-10	SHOULDER SCREW D=7.14 H=7	1
12	85.10-9	STITCH SELECTING SPUR GEAR	1
13	85.10-10	INTERMEDIATE GEAR SHAFT	1
14	85.10-11-00	ASSY SPEED SLOWER FRICTION	1
15	85.3-11	SCREW	2
16	85.10-11	SPEED SLOWER FRICTION WHEEL	1
17	85.10-12	GEAR LAGER	1
18	85.10-13	SCREW	1
19	85.10-14	ROLLER	1
20	85.10-15	THREAD BIND NOTCH	1
21	85.10-16	SPACER	1
22	85.10-17	SCREW M4X0.5 L=4.5	2
23	85.2-15	SCREW M5 L=8	2
24	90.1-29-5	HINGE SCREW D=8 H=3.4	1
25	85.10-18-00	STITCH ADJUSTING ARM ASM	1
26	85.10-18	STITCH ADJUSTING ARM	1
27	85.10-19	SCREW M6 L=16	1
28	85.9-11	STITCH ADJUST ROLLER	1
29	85.10-20-00	STITCH ADJUST CAM ASSY	1
30	85.10-20	STITCH ADJUST CAM	1
31	85.10-21	NUT	2
32	85.10-22	SCREW	1
33	85.10-23	SCREW M4X0.7 L=5	1
34	40.4-30	SCREW	2
35	85.10-24	SCREW	1
36	85.10-25	SOACER	1
37	85.10-26	STITCH CAM	1
38	85.10-27	STOP MOTION CAM SHOE	1

THREAD BIND NOTCH COMPONENTS



REF No	RART NO	DESCRIPTION	Q'TY
1	85.11-1	THREAD BIND LEVER	1
2	85.11-2	CONNECTING PLATE LARGE	1
3	85.2-33-3	WASHER	2
4	85.2-7	SCREW	2
5	85.11-10	SCREW	2
6	85.1-9	SPRING	2
7	85.11-4	PIN	1
8	85.11-10	SCREW	1
9	85.11-3	THREAD BIND ARM	1
10	85.4-38	SCREW	2
11	85.11-5	SCREW	1
12	85.11-6	THREAD BIND SUPPORT PLATE	1
13	85.11-8	SCREW	1
14	85.11-7	ROLLER	1

THREAD STAND COMPONENTS



REF No	RART NO	DESCRIPTION	Q'TY
1	85.12-1	THREAD STAND ASM	1
2	85.12-1-2	SPOOL REST ROD,UPPER	1
3	20.8-6-1	SPOOL REST ROD,LOWER	1
4	85.12-1-4	THREAD STAND HOLDER PLATE	1
5	85.12-1-3	THREAD RAISING THREAD GUIDE A	2
6	20.8-6-5	SPOOL REST ROD JOINT	2
7	20.8-6-4	SPOOL REST ROD RUBBER CAP	1
8	20.8-6-6	SPOOL PIN	1
9	20.8-6-9	SPOOL REST CUSHION	2
10	20.8-6-7	SPOOL RETAINER	2
11	20.8-6-2	WASHER 16X30X2.6	2
12		NUT M16X1.5	3
13	85.12-1-1	SPOOL REST BRACKET ASM	1
14		SCREW M5 L=14	2
15		NUT M5	2
16		NUT M5	1
17		SCREW M6 L=10	1
18		SCREW M5X0.8 L=8	1
19		WASHER 5.2X9.5X0.6	1
20		SPRING WASHER	1
21		SPRING WASHER 5.2X8.2X1	1
22	20.8-6-11	THREAD GUIDE	1
			1
			1

060	Foot-lifter Maintain power	6%	0 ~ 100%	Power for foot-lifter quite stay	Parameter is not good too large, easy to heat, affecting time
061	After the release of the presser foot, the time of delay needle down	1	1 ~ 900	When the presser foot down, operation of the motor required delay time	When parameter No. 63 open, the protection switch function open, no need delay
062	Time to maintain foot-lifter the power of time	180	0 ~ 900	After motor running, foot-lifter Residence time	
063	Foot-lifter protection needle sensor switch	1	0: OFF 1: ON		When parameter 63 is closed, you need to set parameters No. 61 to 350 or more, otherwise easy to break the needle
065	Delay time presser foot	0	0 ~ 900		
071	Running speed	1500	200 ~ 1800		

046	Wiper action delayed start time	40	10 ~ 2000		
047	Wiper action time	70	10 ~ 2000		
048	Wiper action time at full power time	70	10 ~ 990		
050	Wiper action time at maintain power	50	1 ~ 100		
051	Wiper action to release the protect time power	50	20 ~ 800		
055	Wiper function on off switch	000((OFF)	0001 (ON)		
058	Foot-lifter action time at full power time	160	0 ~ 900		Not good too big effect of electromagnets time
059	Foot-lifter full-power power	100%	0 ~ 100%		Opinions parameter values 80 ~ 100

2: How to enter parameters and how to modify the parameters

Together touch [P] and [−] enter into "System parameters" list, screen display 0000, after input password, then touch ([OK]) enter into. After entering the system, the parameters number can be seen, then you can use ([+]) ([−]) key to switch the parameter number, when you find the need modify number, then touch ([P]) key enter the current parameters, last touch ([OK]) button to save and Esc

Note: the up entry method, specific parameters No. on behalf of the parameters meaning as follows:

3: Operating Parameter Description Table

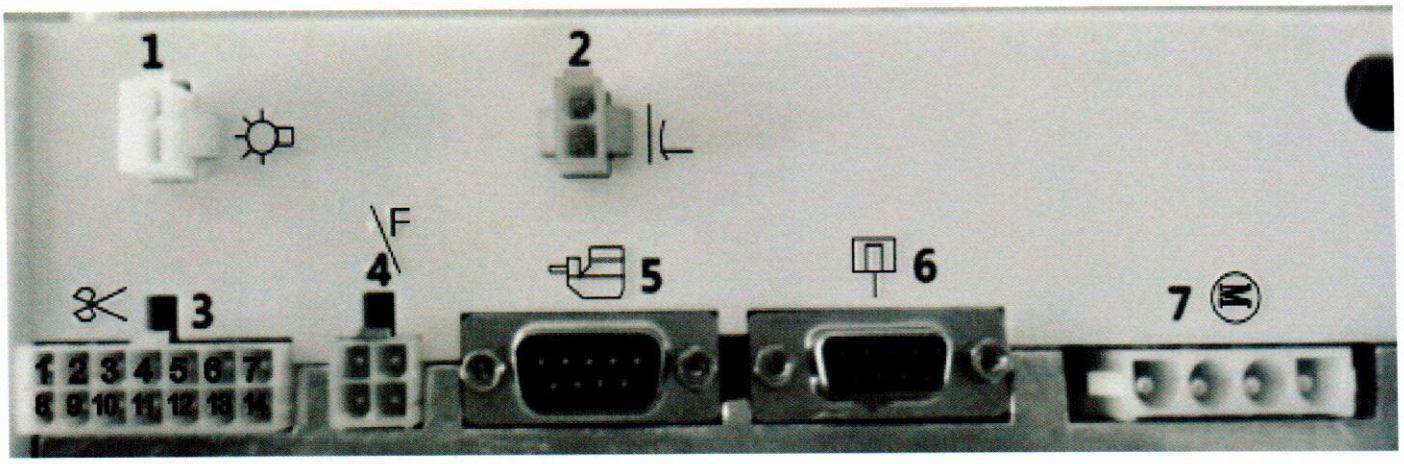
373D System parameter list

System parameter list	Function Description	Function parameter default values	Function parameter ranges	Parameter Description	Precautions
002	Reset speed	200	150 ~800		
021	Restore the system password	000	000 ~ 003	This parameter is adjusted to 003 long press OK button	Restoring the factory password
023	Display speed		200 ~ 1800	Click the (P) key	Display motor speed
024	Governor detected	About 200 (Midpoint)		Detection governor normal	Detection Should before reset, otherwise affect safety
025	Automatic Running	0	0: close , 1:open	Machine Running run	Turn the power on again to close the parameter
031	Presser foot advance angle	80	10 ~ 90	Advance angle more bigger the sensitivity more stronger	Opinions parameter values 40 ~ 80

5: Error code analysis

Display error code	Error code meaning	: Various possible for the erro	Solution
ER-01	**No find needle position**	**1: Hand wheel and motor** **2: Hand wheel magnet off** **3: Hand wheel magnet polarity reversal** **4: Nine-pin terminal head Poor contact** **5: Motor hall damaged, with the change motor**	
ER-02	**Pedals velometer signal wrong**	**1: Not plugged velometer into box** **2: velometer Inserted upside** **3: velometer line broken** **4: velometer damage**	
ER-03	**Motor phase error signal**	**1: Nine-pin terminal head Poor contact** **2: Hall and rotor has large deviations when the motor is mounted** **3: Motor hall damage**	

4: The control box Port Description



Port Number	Port device name for the connection
1	373D button sewing machine head LED socket
2	Presser foot control port, connect the presser foot solenoid or solenoid valve (30V)
3	14P multifunction port (Needle-protect switch and start the machine position sensor socket)
4	Foot pedals port , connection governor
5	connecting 373D the control panel display
6	Connect the motor phase signal line
7	connection motor No.4 drive line

No.3 14p multifunction port

The 3rd multifunction port label	Function
1，8，11	1：GND 8： Signal 1 11:5V
2，9，12	2：GND 9： Signal 2 12:5V
3，10	3：Presser foot output 10:30V
4，2	4：Protection signal input 2：GND
5	5：Ground
6，13	6： wiper output 13:30V
7，14	7： Scissors output 14:30V

前言

Preface

欢迎使用本公司产品，制衣行的正确投资选择！

Welcome to use the our products, it is the right investment choices in garment industry!

本说明书为本公司新研发的“373D 直驱电机控制箱”产品参考手册，请认真阅读此手册以更好的运用本公司产品！

This user manual is for our newly developed “373D ditrect drive motor control box” products reference manual, Please read this manual carefully,hope it can give you useful help!

阅读本说明前以下要求说明请注意：

Before reading the manual,please note the following requirements:

1：用户使用作业前必须可靠接地，保证人身安全！

The user must be grounded before operations to ensure safety

2：非专业人士请勿拆卸控制箱

Non-professionals do not disassemble the control box

3：控制箱与电机远离强磁高辐射环境

The control box and motor away from the magnetic high radiation environment

4：不要在过热环境中作业

Do not work in hot environment

5：不要在过于潮湿环境中作业

Do not work in humid environments

6：220V 电控：【220V 接入供电时电压稳定在（210V~240V）之间】

220V electronic control: [220V access to power supply voltage stability between (210V~240V)]

110V 电控：【110V 接入供电时电压稳定在（100V~130V）之间】

110V electronic control: [110V access to power supply voltage stability between (100V~130V)]

安全叮嘱：

Safety requirement:

1：电机电控接通电源时（开机状态）请不要把脚放在脚踏板上

Do not put your feet on the pedals when the control box and motor is switched on (boot status)

2：本产品请专业人士安装调试

Let professionals to install and debug this product

3：严禁在通电时打开控制箱与电机端盖

Do not open the control box and the motor cover when energized

4：换针，穿线或更换底线时请关闭电源

Please turn off the power when changing the needle,threading or replacing the bottom line

5：安装，拆卸维修时请拔掉电源插头

During installation and removal service,please turn off the power and pull the plug

6：翻抬缝纫机时请关闭电源

Please turn off the power when turn lift sewing machine

7：使用本产品请远离高频电磁波和电波发射器等，以免所产生的电磁波干扰伺服驱动器而发生错误动作。

When use this product, please stay away from high-frequency electromagnetic waves and radio wave transmitters, etc., in case the electromagnetic waves generated interfere with the servo drive to occur wrong action .

郑重申明：

Solemnly Declare:

1：不遵守安全使用说明操作规章，发生意外后果自负。

Do not comply with the manual book operating regulations and the safety requirements, all accidental occurrence should be taken by yourself.

2：未经本公司授权，请勿擅自改动产品，由此而引起的后果本公司不负任何责任。

Without our authorization, please do not alter our products, our company is not liable for any consequences arising therefrom.

保修策略：

Warranty policy:

1：本产品自购买起免费保修 2 年，终身维护。保修期内除人为损坏外出现的任何质量问题可免费修

Since from the purchase of this product,the free 2-year warranty,lifetime maintenance. During the warranty period,any quality problems the product will be free repaired,except artificial damage.

2：未经本公司同意自行拆卸，改装造成损坏将不给于保修

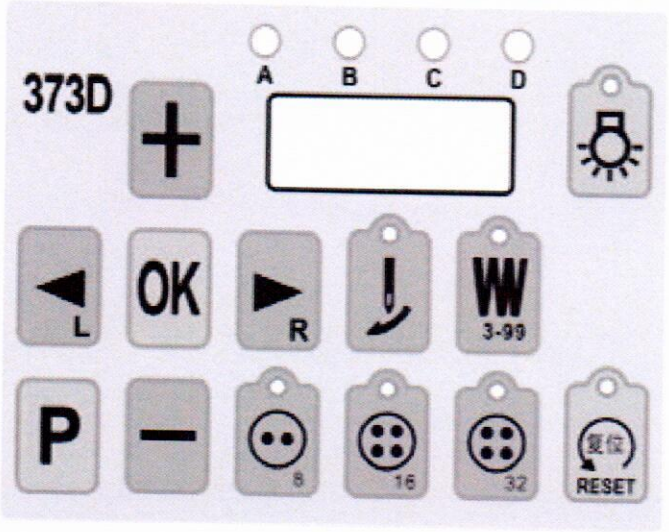
Without our consent disassemble or modify,the damaged will not give in warranty

3：但凡出现无法解决的问题可以联系本公司

Whenever find the problem can not be solved,you can contact with our company

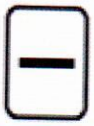
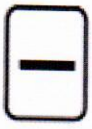
1：显示屏常用操作介绍

Introduction of display screen common Operation



序号 No.1	按键图标 Button Icons	功能说明 Function Description
1	LED（A）	当压脚放下到位时 LED 指示灯 A 亮起，压脚抬起或压脚放置不到位时 LED 指示灯 A 熄灭。（可用作判断压脚实时情况，易可用来判断压脚动作传感器好坏） When Press foot put into correct place LED lamp A on, When Press foot up or put into wrong place LED lamp A off.(It can be analyzed the presser foot Actual situation，Also to judge the quality of the presser foot motion sensor)
2	LED（B）	当机器左侧开机找针位的小铝轮旋转到某个固定位置被传感器感应到后 LED 指示灯 B 亮起。（可用来判断感应铝轮传感器的好坏） When small aluminum wheel in left of machine is rotated to a fixed position (The Al. wheel will auto to find needle stop position when machine open)，It will be detected by sensor, LED lamp B will light. (It also can be used to judge the quality of aluminum wheel sensor)
3	LED（C）	电机上针位指示 LED Up Needle position of motor LED
4	LED（D）	此 LED 指示灯为系统状态指示灯，当系统处于运行状态时 LED 指示灯 D 亮起，当系统处于待机时 LED 指示灯 D 熄灭。 This LED system status indicator, when system is running, LED lamp D light. When the system is on waiting, LED lamp D off.
P1		**钉扣机 8 针快捷按键，当此功能开启时按键上方 LED 亮起，钉扣机将运行在 8 针模式。（可与 16 针 32 针配合切换使用）** **Button sewing machine 8-pin shortcut keys, When the function open，LED lights on above the key, machine will run 8-pin mode. (Can with 16-pin or 32-pin switchable)**

P2		钉扣机 16 针快捷按键，当此功能开启时按键上方 LED 亮起，钉扣机将运行在 16 针模式。（可与 8 针 32 针配合切换使用） **Button sewing machine 16-pin shortcut keys, When the function open，LED lights on above the key, machine will run 16-pin mode. (Can with 8-pin or 32-pin switchable)**
P3		钉扣机 32 针快捷按键，当此功能开启时按键上方 LED 亮起，钉扣机将运行在 32 针模式。（可与 8 针 16 针配合切换使用） **Button sewing machine 32-pin shortcut keys, When the function open，LED lights on above the key, machine will run 32-pin mode. (Can with 8-pin or 16-pin switchable)**
P4		拨线快捷按键，功能开启时按键上方 LED 亮起，功能关闭时按键上方 LED 熄灭。 **Wiper shortcut keys，When the function open，LED lights on above the key，When the function close the LED off.**
P5		钉扣针数自定义键，点动（  ）键，屏幕显示 n-08，后面 08 在闪烁此时点动（  ）（  ）按键可直接调整针数，调整完毕后点动（  ）键将保存当前针数并运行自定义针数模式。 **Button sewing Pin Defined Button, Touch（  ）, Screen display n-08, after the number twinkling, touch（  ）（  ）can adjust the pin number, after finish touch（  ） to save the number and running the defined Button mode.**

P6		机头 LED 灯开关按键，当按键上方 LED 灯亮起时表示机头 LED 灯开启，当按键上方 LED 灯熄灭时表示机头 LED 灯关闭。 Head LED light switch button. The LED on means head LED lamp is on, otherwise it Off.
P7		钉扣机开机复位按键，每次开始必须进行一次复位动作后方能运行。 Machine Power reset button，when open the machine power, should be touch the reset one time, then can run the machine.
1		进入参数调整铺助键，可与（  ）（  ）键配合使用，不同配合将进入不同参数列表 Enter parameter adjustment Secondary key, together with （  ）or （  ） using, different Combination into different Parameter List
2		参数确定保存键 Parameter determines the Save button
3		“+”键（修改参数时加） “+” button (modify the parameters plus)
4		“-”键（修改参数时减） “-” button (modify the parameters minus)
5		向左键（在参数列表中用来返回上一页面用） In the parameter list to return to the previous page
6		向右键（在参数列表中进入参数调整用） In the parameter list to enter the parameter for adjustment

快捷按键功能

Shortcut Key Function

	长按（  ）键功能 Long press （  ）	直接进入拨线参数调整 **Direct into enter the Wiper parameter adjustment**
	长按（  ）键功能 Long press （  ）	直接进入压脚参数调整 **Direct into enter the press foot parameter adjustment**
	长按（  ）键功能 Long press （  ）	按一下（  ）键。显示 000。长按（  ）键 5 秒，还原出厂参数。 **Touch （  ） button, Screen display 000, long press （  ） button 5 seconds, Restore factory settings**

2：如何进入参数与如何修改参数

How to enter parameters and how to modify the parameters

系统参数进入解析：

System parameters entering analysis:

按住（P）键不放，再按（—）键将进入“系统参数”列表，显示屏会显示出 4 个零，输入密码后按(OK)键即可进入。进入后可看见系统参数编号，此时可以用（+）（—）键，切换系统参数编号，找到需要调整的参数时按下（P）键，进入当前此项参数调整，最后按（OK）键，保存退出。

Together touch P and — enter into “System parameters” list, screen display 0000, after input password, then touch (OK) enter into. After entering the system, the parameters number can be seen, then you can use (+) (—) key to switch the parameter number, when you find the need modify number, then touch (P) key enter the current parameters, last touch (OK) button to save and Esc

注：以上是进入方法，具体参数号代表的参数意思详情如下：

Note: the up entry method, specific parameters No. on behalf of the parameters meaning as follows:

3：操作参数说明表

Operating Parameter Description Table

373D 系统参数列表：

373D System parameter list

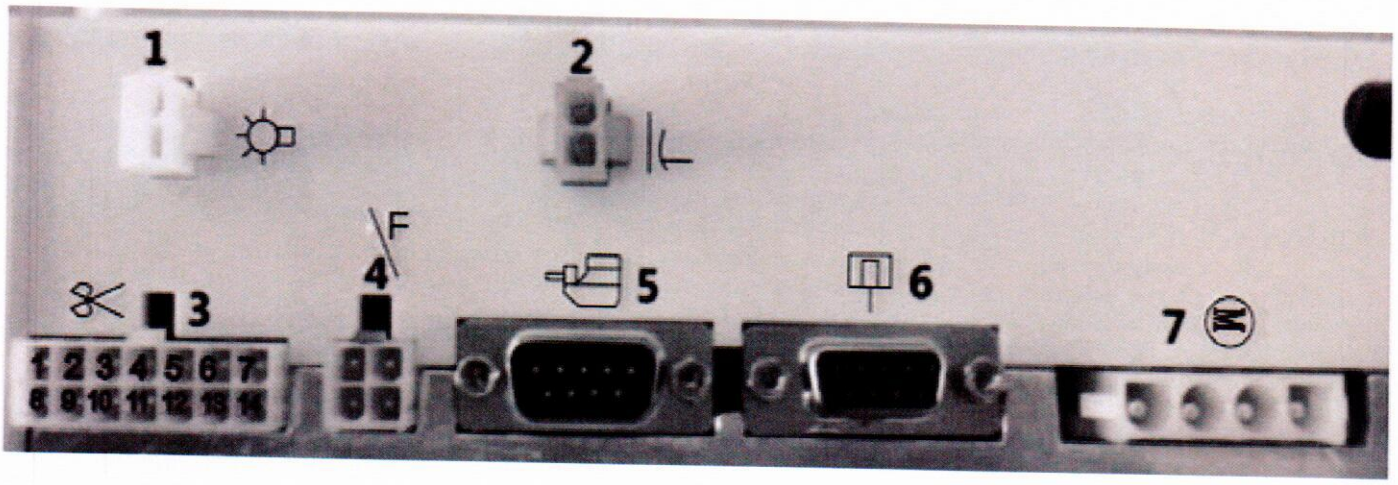
菜单号 System parameter list	功能说明 Function Description	功能参数默认值 Function parameter default values	功能参数范围 Function parameter ranges	参数说明 Parameter Description	注意事项 Precautions
002	复位速度 Reset speed	200	150 ~800	开机后寻找位置的运转速度	不易太快影响安全
021	还原系统密码 Restore the system password	000	000 ~ 003	此参数调到 003 长按 OK 键即可 This parameter is adjusted to 003 long press OK button	还原出厂密码 Restoring the factory password
023	显示速度 Display speed		200 ~ 1800	按一下(P)键 Click the (P) key	显示电机转速 Display motor speed
024	调速器检测 Governor detected	200 左右（中点值） About 200 (Midpoint)		检测脚踏板是否正常 Detection governor normal	在未复位前检测不然影响安全 Detection Should before reset, otherwise affect safety
025	自动磨合 Automatic Running	0	0：关闭 1：开启 0: close , 1:open	机器磨合运行 Machine Running run	关闭电源重新开启即可关闭该参数 Turn the power on again to close the parameter
031	抬压脚提前角度 Presser foot advance angle	80	10 ~ 90	提前角度越大灵敏度越强 Advance angle more bigger the sensitivity more stronger	意见参数值 40 ~ 80 Opinions parameter values 40 ~ 80

046	拨线动作延时启动时间 Wiper action delayed start time	40	10 ~ 2000		
047	拨线动作时间 Wiper action time	70	10 ~ 2000		
048	拨线动作功率时间 Wiper action time at full power time	70	10 ~ 990		
050	拨线动作维持功率时间调整 Wiper action time at maintain power	50	1 ~ 100		
051	拨线动作释放保护时间 Wiper action to release the protect time power	50	20 ~ 800		
055	拨线功能开启开关 Wiper function on off switch	000(关闭)(OFF)	0001(开启)(ON)		
058	抬压脚全功率时间 Foot-lifter action time at full power time	160	0 ~ 900		不易过大影响电磁铁使用时间 Not good too big effect of electromagnets time
059	抬压脚全功率功率 Foot-lifter full-power power	100%	0 ~ 100%		意见参数 80 ~ 100 Opinions parameter values 80 ~ 100

060	抬压脚维持功率 Foot-lifter Maintain power	6%	0 ~ 100%	抬起压脚后挺留时的功率 Power for foot-lifter quite stay	参数不易过大，容易发热，影响使用时间 Parameter is not good too large, easy to heat, affecting time
061	放压脚后，下机针延时 After the release of the presser foot, the time of delay needle down	1	1 ~ 900	当压脚放下时，运行电机需要的延时时间 When the presser foot down, operation of the motor required delay time	当 63 号参数打开时保护开关起作用不需要延时 When parameter No. 63 open, the protection switch function open, no need delay
062	抬压脚维持功率时间 Time to maintain foot-lifter the power of time	180	0 ~ 900	电机运行后抬起压脚停留的时间 After motor running, foot-lifter Residence time	
063	抬压脚保护机针传感器开关 Foot-lifter protection needle sensor switch	1	0：关闭 OFF 1：开启 ON		当 63 号参数关闭时，需要将 61 号参数设置为 350 以上，不然容易断机针 When parameter 63 is closed, you need to set parameters No. 61 to 350 or more, otherwise easy to break the needle
065	抬压脚延时时间 Delay time presser foot	0	0 ~ 900		
071	运行速度 Running speed	1500	200 ~ 1800		

4：控制箱端口说明

The control box Port Description



端口号码 Port Number	端口连接的器件名称 Port device name for the connection
1	373D 钉扣机 LED 机头灯插孔 373D button sewing machine head LED socket
2	抬压脚控制端口，连接压脚电磁铁或电磁阀（30V） Presser foot control port, connect the presser foot solenoid or solenoid valve (30V)
3	14P 多功能端口 （机针保护开关与机器启动位置传感器插口） 14P multifunction port (Needle-protect switch and start the machine position sensor socket)
4	脚踏板端口，连接调速器 Foot pedals port , connection governor
5	连接 373D 显示控制面板 connecting 373D the control panel display
6	连接电机相位信号线 Connect the motor phase signal line
7	连接电机 4 线驱动线 connection motor No.4 drive line

3 号 14P 多功能端口

No.3 14p multifunction port

3 号多功能端口标号 The 3rd multifunction port label	功 能 Function
1，8，11	1：GND 8：信号 Signal 1 11:5V
2，9，12	2：GND 9：信号 Signal 2 12:5V
3，10	3：压脚输出 Presser foot output 10:30V
4，2	4：保护信号输入 Protection signal input 2：GND
5	5：大地 Ground
6，13	6：拨线输出 wiper output 13:30V
7，14	7：剪刀输出 Scissors output 14:30V

5：错误代码解析

Error code analysis

显示的错误码 Display error code	错误码意思 Error code meaning	错误的产生 Various possible for the erro	解决错误 Solution
ER-01	找不到停针位 **No find needle position**	1:手轮和电机靠的不够进 2：手轮上磁钢脱落 3：手轮磁铁极性装反 4：九针端子头接触不良 5：电机霍尔损坏，跟换电机 **1：Hand wheel and motor** **2：Hand wheel magnet off** **3: Hand wheel magnet polarity reversal** **4: Nine-pin terminal head Poor contact** **5：Motor hall damaged, with the change motor**	
ER-02	脚踏板信号错误 **Pedals velometer signal wrong**	1：开机时没插调速器 2：调速器插反 3：调速器线断开 4：调速器损坏 **1：Not plugged velometer into box** **2: velometer Inserted upside** **3: velometer line broken** **4: velometer damage**	
ER-03	电机相位信号错误 **Motor phase error signal**	1：九针插头接触不良 2：电机安装时霍尔和转子存在大偏差 3：电机霍尔坏 **1：Nine-pin terminal head Poor contact** **2: Hall and rotor has large deviations when the motor is mounted** **3: Motor hall damage**	

ER-04	电机堵转保护 Motor stall protection	1：缝纫机过重或堵死 2：电机过载 3：电机 4 线驱动线没连接好或插反 1: Sewing overweight or blocked 2: Motor overload 3: 4-wire motor drive cable is not connected or inserted upside	
ER-05	硬件过流保护 Hardware over current	1：缝纫机过重或堵死 2：电机过载 3：电机相位信号线没连接好 1: Sewing overweight or blocked 2: Motor overload 3: Motor phase signal line is not connected	
ER-07	串口通讯超时 Serial communication timeout	1：显示屏连接主板线连接不良 2：主板芯片损坏 1: Display bad cable connection Motherboard 2: Motherboard chip damage	
ER-09	存储器不良 Poor memory	1:主板存储器损坏或不良 1: Motherboard memory corruption or bad	
ER-13	压脚传感器无信号 Presser foot sensor no signal	1：压脚传感器安装距离过远 2：压脚传感器损坏 3：压脚连杆上的磁铁脱落或装反 1: Presser foot sensor is mounted too far away 2: Presser foot sensor damage 3: Magnet on press foot connecting bar Falling or installed backwards	
ER - 14	复位传感器找不到针位 Reset sensor can not find the needle position	1：左侧感应铝轮的传感器损坏 2：铝轮上磁铁脱落或装反 1: The sensor on left induction aluminum wheel is damaged 2: Magnet on aluminum wheel Fall or installed backwards	
ER - 15	9700 错误信号 9700 error signal	1：9700 编码器损坏 1: 9700 encoder is damaged	