

ENGLISH

**AT-35 the tape cutter device
for double-needle machine
INSTRUCTION MANUAL / PARTS LIST**

CONTENTS

PREFACE.....	1
1. INSTALLATION INSTRUCTIONS	2
1-1. Components of the Device	2
1-2. Installation of the Device	3
1-2-1. Installation of Needle Plate and Cover Plate.....	3
1-2-2. Installation of Cutter Assembly	3
1-2-3. Wiring	6
2. OPERATING INSTRUCTIONS	7
2-1. Tape Cutting Device Function Switch	7
2-2. Setting the Tape Cutting Device Drive Mode	8
2-2-1. Reverse Pedal Driven Tape Cutting Operation	8
2-2-2. Customer-Defined Switch Setting for Tape Cutting Function	8
2-2-3. Enabling Knee Switch Tape Cutting Function	9
2-3. Counting and Clearing	11
2-4. Parameter Description	12
2-5. Error Codes.....	13
3. REPAIR AND MAINTENANCE	14
3-1. Repair	14
3-1-1. Common Problems and Solutions.....	14
3-1-2. Change of The Moving Knife	14
3-2. Maintenance.....	15
4. SUPPLEMENTARY PARTS MANUAL	16
4-1. Optional Accessories	16
4-2. Options Gauge Parts List	17
5. PARTS LIST	18
5-1. AT-35 The Tape Cutter Device for Double-Needle Machine	18

PREFACE

Follow the installation manual and can help you finish the installation in a short time.

Before the installation, make sure that input power of control box is correct.

Kindly, don't touch any port while the power source is connected. The ground wire port must be connected correctly, which will enhance anti-jamming capacity of the product.



WARNING

Shut down the power breaker before installation and only the technical personnel can operate.

40301217 The tape cutter device for double-needle machine Cutting Device (AT-35)

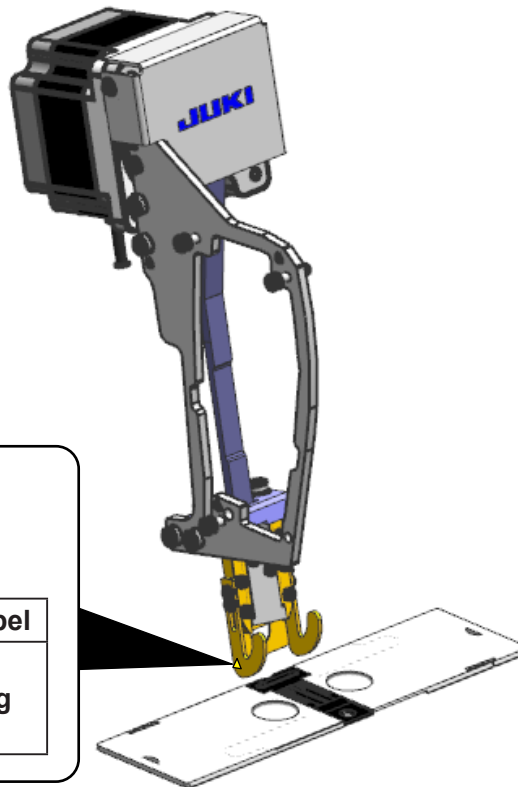
(This device is applicable to the LH-3528BSF0B model)

* Please note that this device and the presser motor cannot be operated simultaneously.



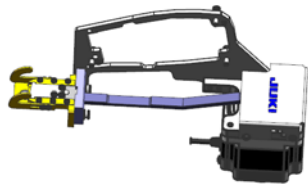
Cut Injury Warning Label

When cutting tape,
there is a risk of cutting
fingers, etc.

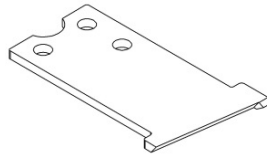


1. INSTALLATION INSTRUCTIONS

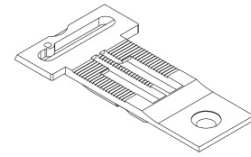
1-1. Components of the Device



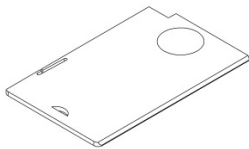
Tape Cutter Assembly



Moving Knife



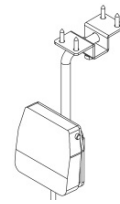
Needle Plate (Options)
* Please refer to **"4-2. Options Gauge Parts List"** p.17.



Left Cover

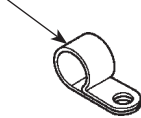


Right Cover

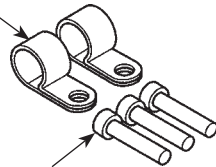


Knee Switch (Options)
Part No. 40143553

Large Wire Clamp × 1



Medium Wire Clamp × 2



Arm Extension Screw × 3

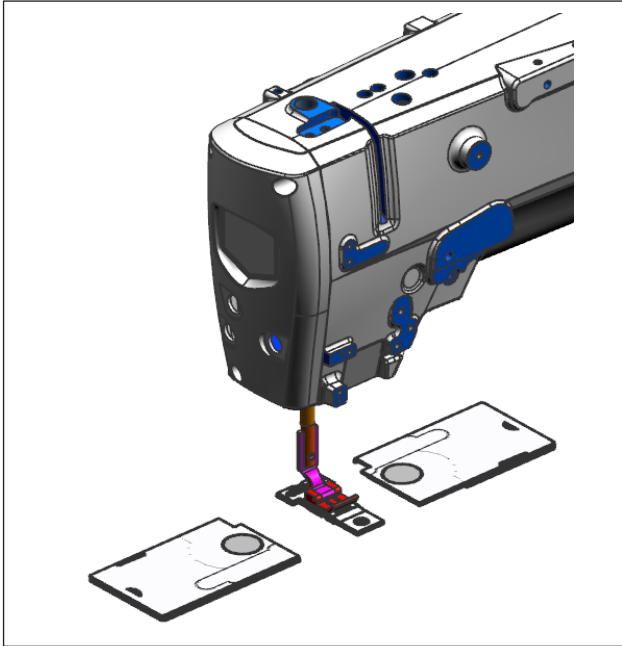


Knee Switch Extension cable (Options)
Part No. 40318198

* The knee switch must be used with the extension cable. If you need to purchase a knee switch, please order the extension cable together.

1-2. Installation of the Device

1-2-1. Installation of Needle Plate and Cover Plate



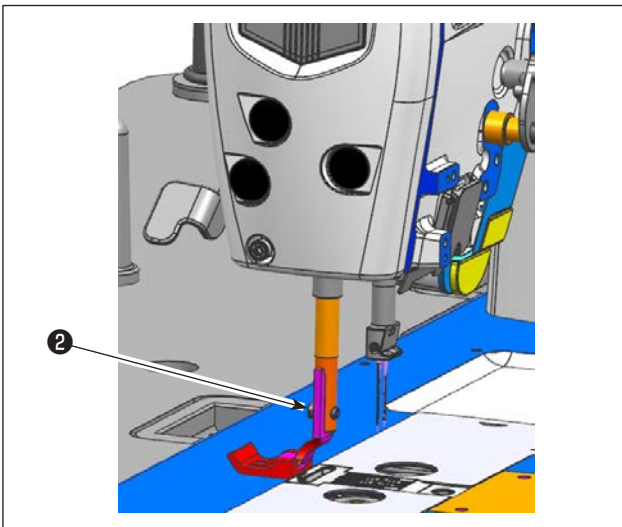
Replace the original needle plate and cover plate with the needle plate and cover plate provided with the device.



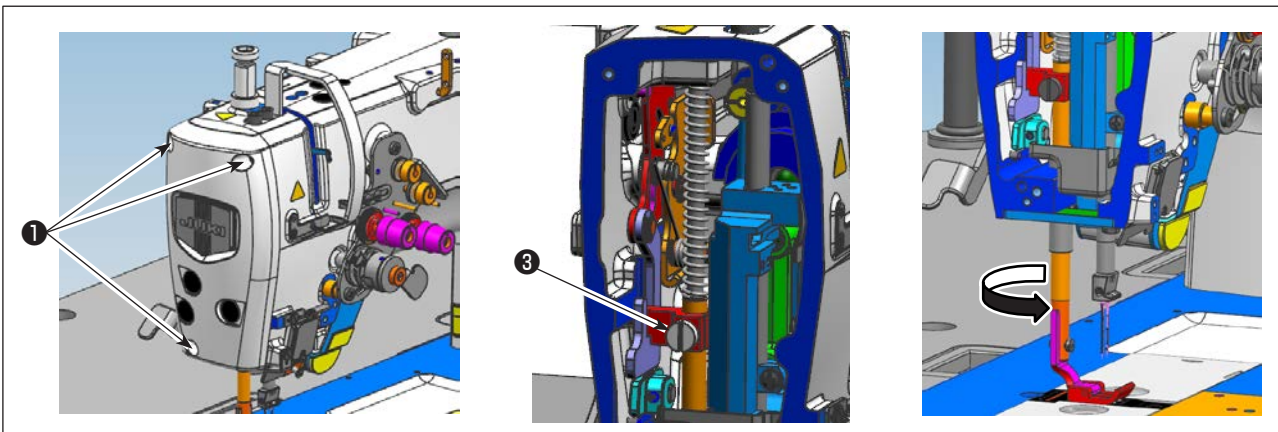
Only needle plates with the same needle position specifications can be replaced.

1-2-2. Installation of Cutter Assembly

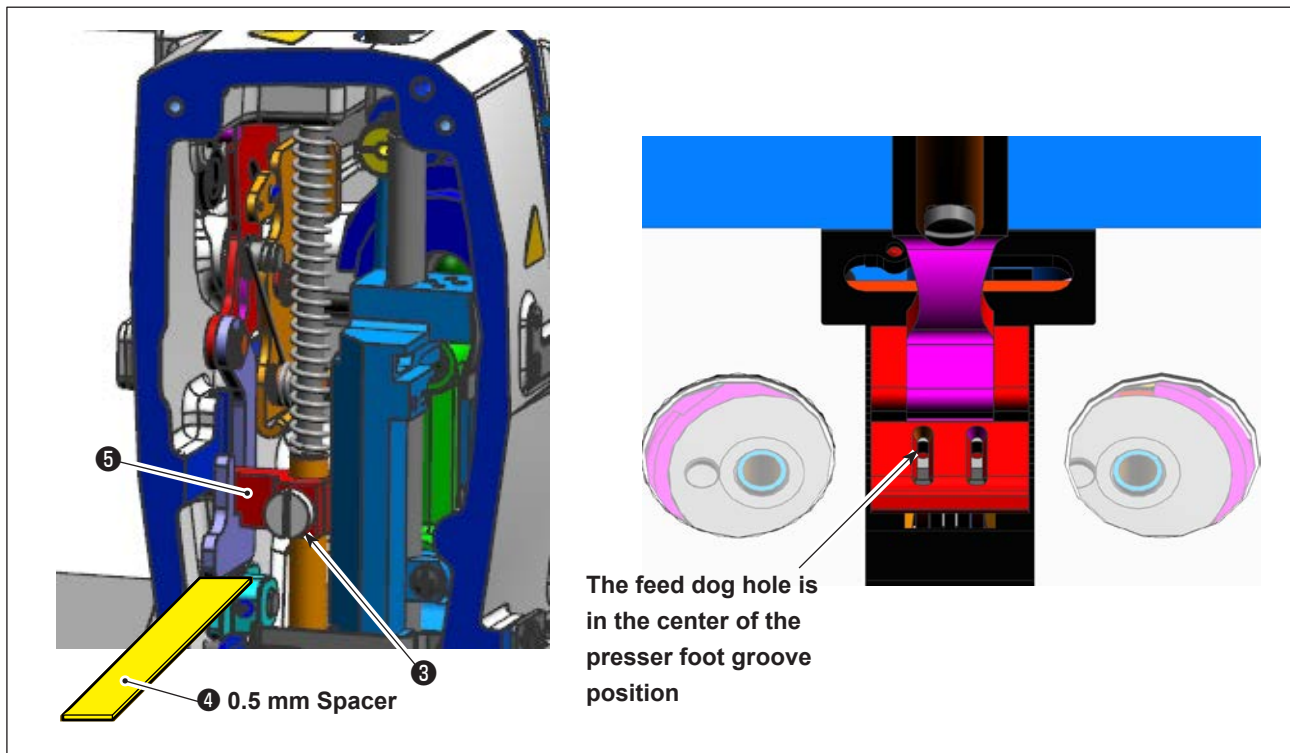
Before installing the cutter assembly, follow the steps below to rotate the presser foot bar 180 degrees to prevent the presser foot mounting screw from interfering with the cutter assembly.



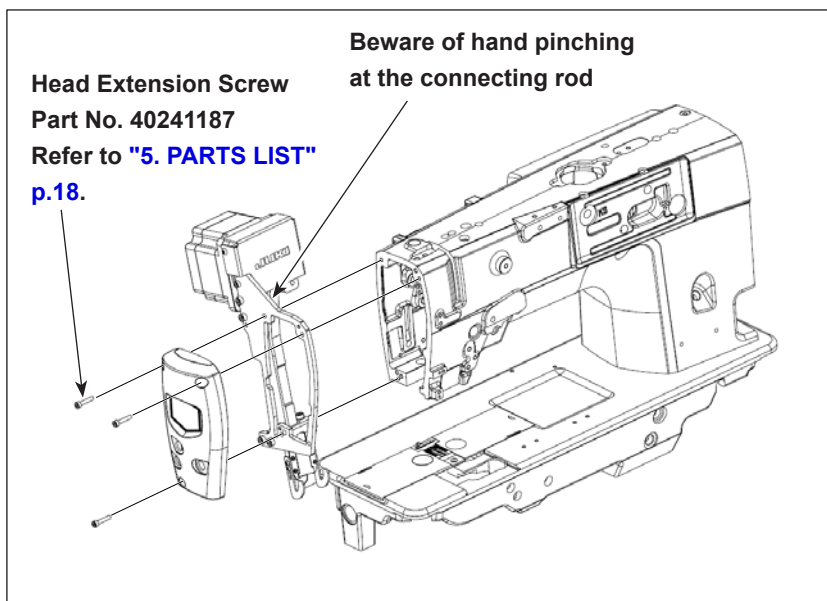
Loosen the presser foot fixing screw ②, install the presser foot in reverse, and tighten the fixing screw ②.



Loosen 3 screws ① on the cover plate and remove the cover plate. Loosen the presser foot clamp screw ③ and rotate the presser foot bar 180°.



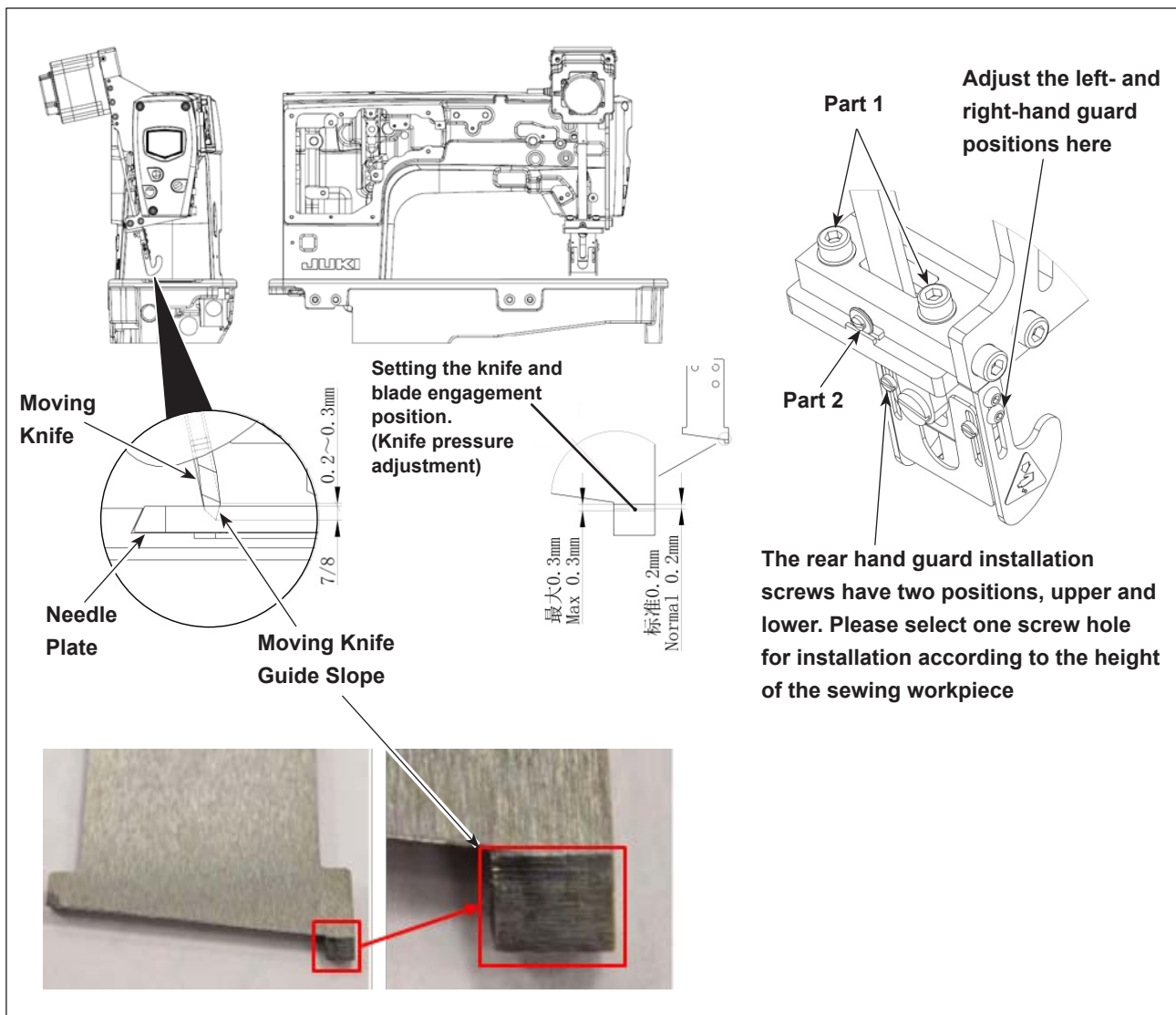
Insert a 0.5mm spacer ④ between the cam and lifting plate, press down on the presser foot clamp ⑤ , and tighten the fixing screw ③ with the feed dog hole centered in the presser foot groove.



Use the head extension screws (40241187) provided with the device to install the cutter assembly together with the original cover plate onto the sewing machine.



When installing the device, do not put your hands between the connecting rod and the sewing machine frame, as hands can easily get pinched.



Loosen the Part 1 two screws, pre tightening. Push the front and back position by hand, when 7/8 of the guide bevel of the moving knife is immersed into the needle plate and about 0.2 mm above the surface of the needle plate, then adjust the front and back position of the moving knife by turning the part 2 screw. Make the guide bevel of the moving knife just contact with the fixed edge. Then use a wrench to tighten the Part 1 two screws (25kg · cm). After the position of the moving knife conforms the position above, adjust the installation height of the hand guard to the suitable position (there hand guard at the left, right and back), then perform the cloth cutting test.



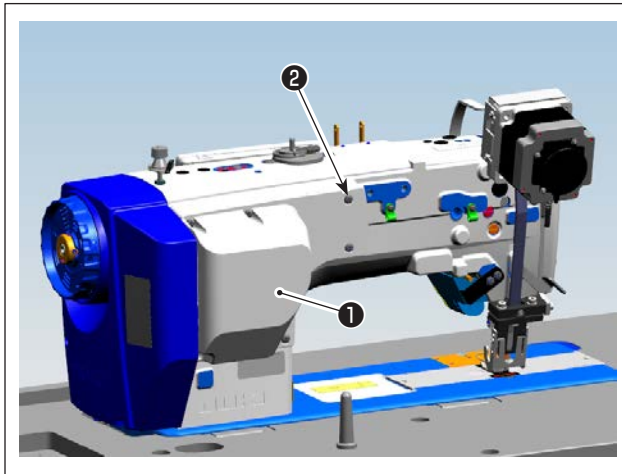
1. The knife life will be decreased rapidly because of the higher pressure, meanwhile may be there will be the risk of colliding the knife; when you make some adjustment, the size that the guide bevel of the moving knife above the needle plate can't exceed 0.3mm.
2. Please confirm the cut point always contact with moving knife and fixed knife in the cutting procession after installation of cutting device. Otherwise, please loosen the part1 two screws for micro adjustment.
3. When adjusting the height of the hand guard. Make sure to adjust the height as low as possible if it can pass through the sewing material to prevent the hand from getting cut.

1-2-3. Wiring

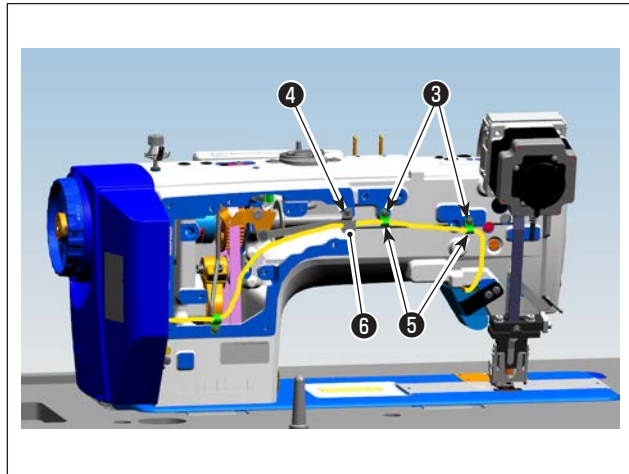


WARNING

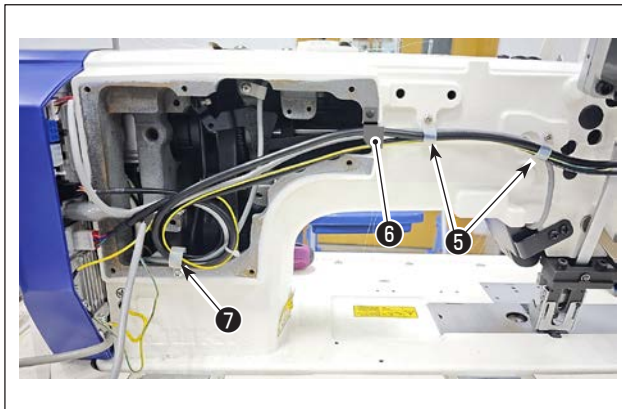
To prevent personal injury caused by accidental startup of the sewing machine, please first cut off the power and confirm that the motor has stopped running before proceeding with operation.



1. Loosen the six screws ② and remove the window plate ① .

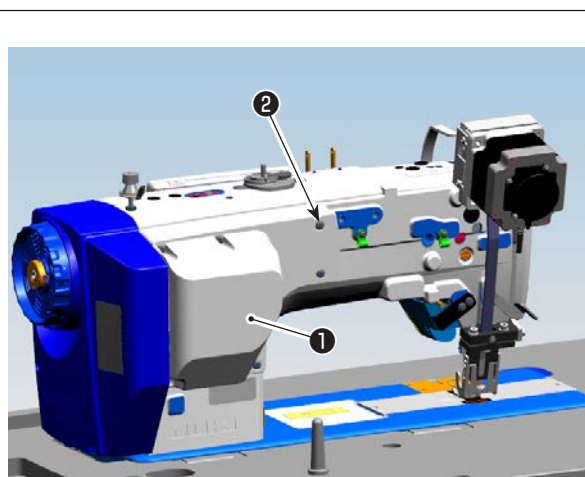
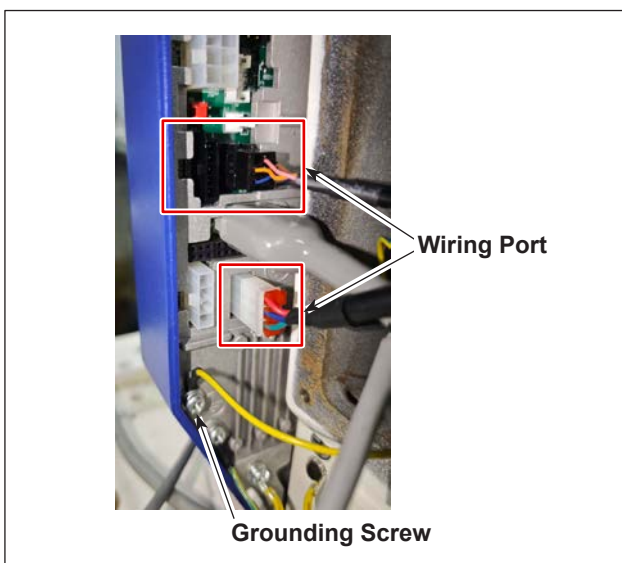


2. Loosen the two screws ③ and one screw ④ , then remove the 2 wire clamps ⑤ and baffle plate ⑥ .



3. Replace ⑤ with the medium wire clamp from the accessories, replace ⑦ with the large wire clamp from the accessories, route the wires as shown in the left figure, and install the baffle plate ⑥ .

* To prevent malfunctions, please ensure that the wires are not pinched or excessively bent during routing, and confirm that the connectors are securely inserted without looseness or disconnection.

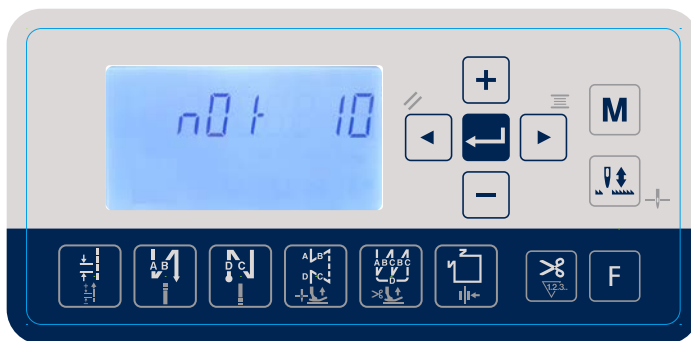


4. Insert the connector into the electrical unit and secure the grounding wire with the grounding screw. Cover with the window plate ① and tighten the 6 fixing screws ② .

2. OPERATING INSTRUCTIONS



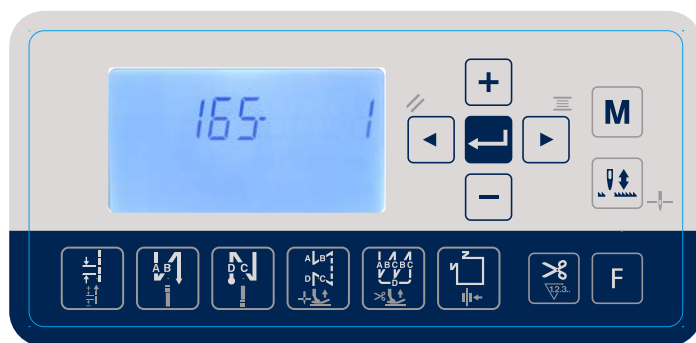
To use the tape cutting device function,
 N01 main control software version must be 12 or higher
 N02 panel software version must be 14 or higher
 N32 motor software version must be 05 or higher
 Please contact maintenance personnel for software upgrades.



2-1. Tape Cutting Device Function Switch

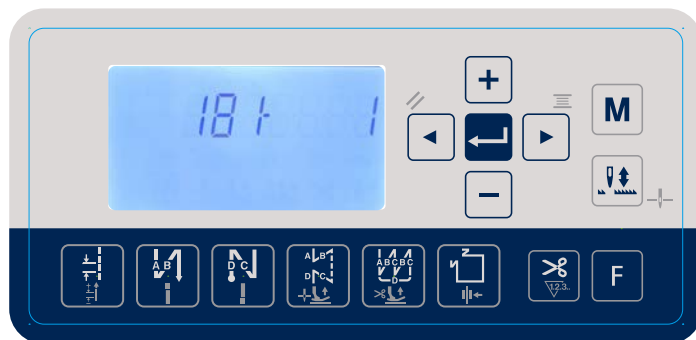
Enable the tape cutting device function through the following steps:

For screen operation, please refer to **"5-3. Function Settings"** in the **LH-3500B main unit instruction manual**.

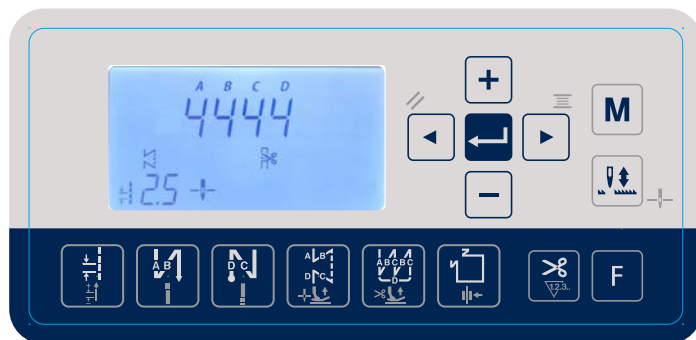


- ① Select 1 for P165 stepping motor function selection parameter (optional tape cutting motor function)

* This parameter requires maintenance authorization. Please contact maintenance personnel to set up the operation.



- ② Select 1 for P181 tape cutting switch (enable tape cutting device function)



- ③ After completing the above settings, please restart the machine.

After restarting, if the tape cutting icon

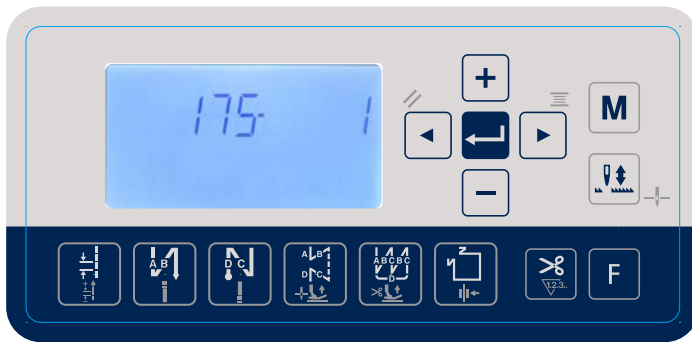


stays lit, the tape cutting device can be used normally.

* When the tape cutting device function is enabled, each time the machine is turned on and the motors return to the origin point when the pedal is pressed in reverse, the tape cutting motor also returns to the origin point. Please pay attention to the cutter movement.

2-2. Setting the Tape Cutting Device Drive Mode

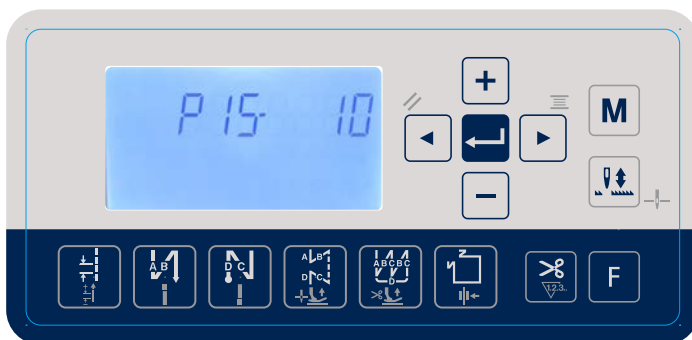
2-2-1. Reverse Pedal Driven Tape Cutting Operation



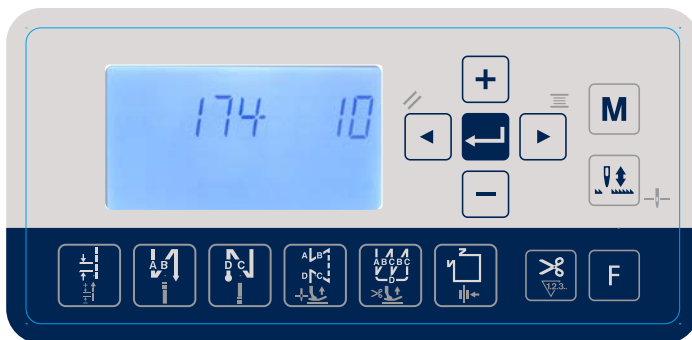
Set P175 reverse pedal control tape cutting motor action function to 1. After sewing is completed, pressing the reverse pedal triggers one tape cutting action.

The initial value is 0, and the function is disabled.

2-2-2. Customer-Defined Switch Setting for Tape Cutting Function



When P015 head switch function option is set to 10, pressing the head switch triggers one tape cutting action



Or when P174 manual switch function option is set to 10, pressing the manual switch also triggers one tape cutting action.

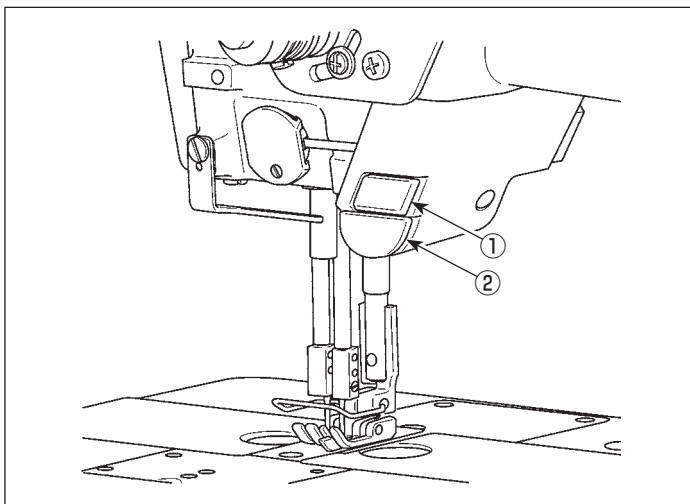


Illustration ① is the head switch
② is the manual switch



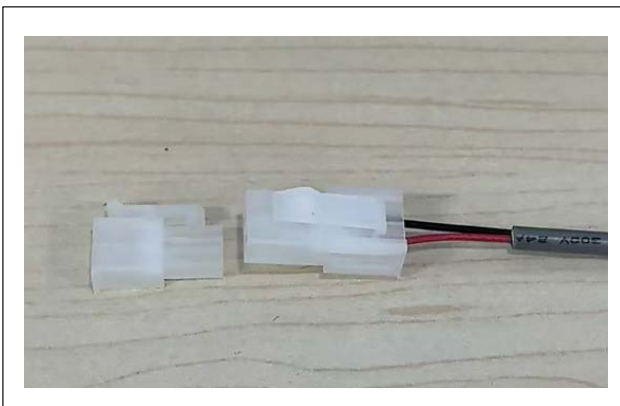
After the sewing machine is powered on, the tape cutting function can be triggered by the machine head switch, handheld switch and knee control switch even when no sewing operation is in progress. Please exercise caution for safety. If tape cutting fails to work, you may trigger the tape cutting action via the manual button for easier operation.

2-2-3. Enabling Knee Switch Tape Cutting Function

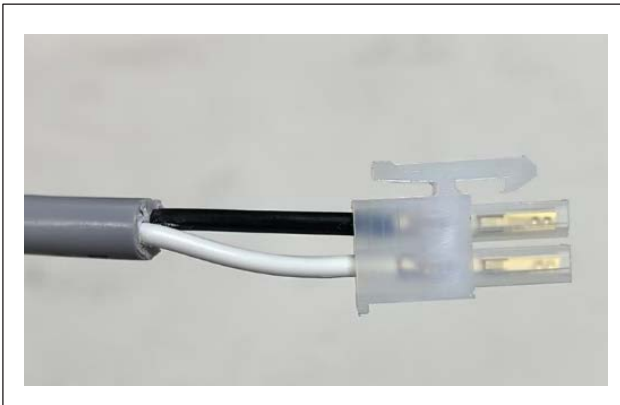
The tape cutting device can be further equipped with an optional knee switch to drive the tape cutting device using the knee switch.



1. Take the knee switch and extension cable out of the package, then cut off the cable tie on the knee switch wire.



2. Unplug the connector on the knee switch extension cable.



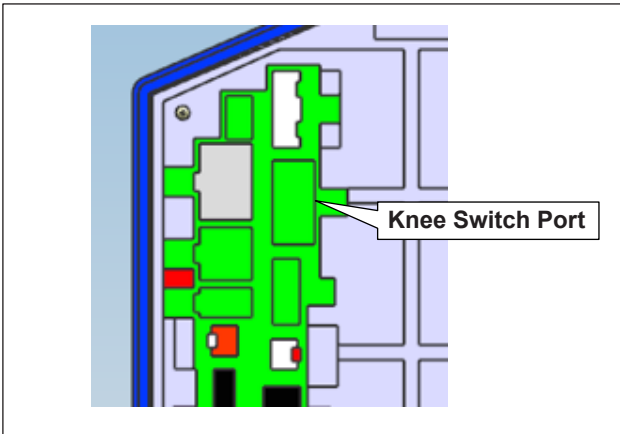
3. Insert the pins of the knee switch wire into the connector as per the diagram.



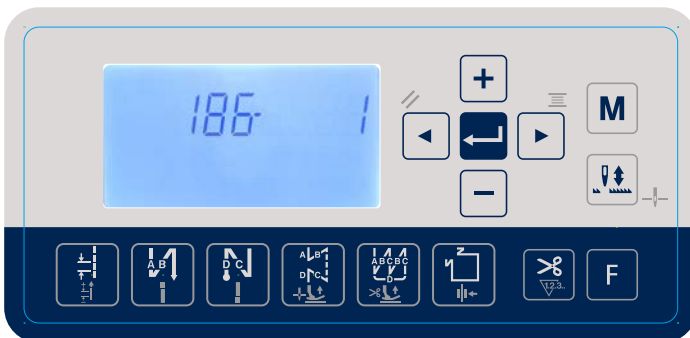
- * Please check the direction of the pins when inserting into the connector.
The pins shall face the locking clip of the connector as shown in the diagram.
After insertion, confirm the connector is fully seated to prevent poor contact or loose connection.



4. Connect the knee switch wire to the extension cable.

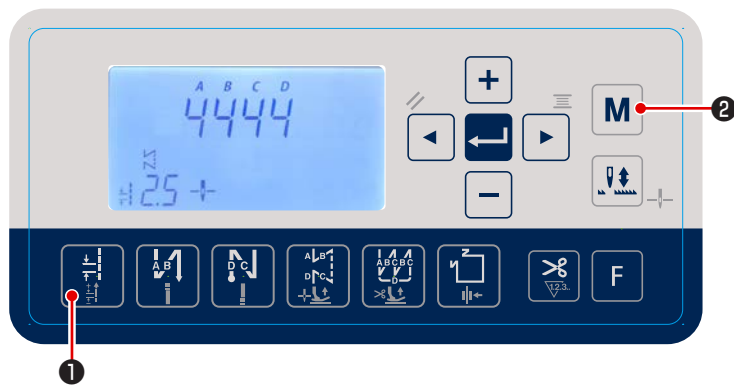


5. Turn off the power and connect the black connector of the cable to the port position of the electrical control box shown in the diagram.
* Pay attention to the connector orientation.

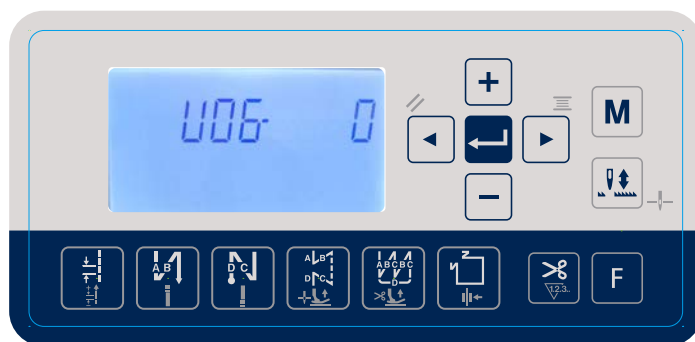


6. Set P186 knee switch control tape cutting motor action function to 1. Pressing the knee switch triggers one tape cutting action.
The initial value is 0, and the function is disabled.

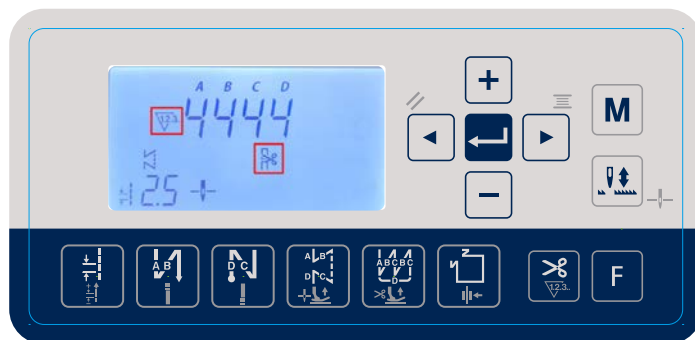
2-3. Counting and Clearing



1. On the sewing interface, simultaneously press  ① and  ② for 3 seconds to enter the production management interface.



2. Select U06 to view the tape cutting count.



3. When the U06 tape cutting count reaches 9999, the tape cutting icon and piece count icon start flashing together. At this point, you need to select the U06 parameter and long press  to manually reset to zero.

2-4. Parameter Description

No.	Item	Content	Level	Setting Range Lower Limit	Setting Range Upper Limit	Initial Value
P015	Head Switch Function Setting	Each function setting : 0 : Function OFF 1 : Half stitch sewing 2 : One stitch sewing 3 : Continuous half stitch sewing 4 : Continuous one stitch sewing 5 : Reverse sewing action during sewing or when stopped midway 6 : Condensed sewing 7 : Sewing piece count increment 8 : Optional function 9 : Half pitch sewing 10 : Tape cutting function 11 : Midway reverse sewing	U	0	11	5
P174	Manual Switch Function Setting	Each function setting: 0 : Function OFF 1 : Half stitch sewing 2 : One stitch sewing 3 : Continuous half stitch sewing 4 : Continuous one stitch sewing 5 : Reverse sewing action during sewing or when stopped midway 6 : Condensed sewing 7 : Sewing piece count increment 8 : Optional function 9 : Half pitch sewing 10 : Tape cutting function 11 : Midway reverse sewing	U	0	11	3
P175	Reverse Pedal Control Tape Cutting Motor Action Function	Select whether to enable reverse pedal control for tape cutting action 0 : Disabled 1 : Enabled	U	0	1	0
P180	Number of Cuts per Tape Cutting Trigger	Can set the number of tape cutting actions each time the tape cutting device is triggered	U	1	5	1
P181	Tape Cutting Switch	Select whether to enable the tape cutting function 0 : Disabled 1 : Enabled	U	0	1	0
P186	Knee Switch	Select whether to enable knee switch control for tape cutting action 0 : Disabled 1 : Enabled	U	0	1	0
P187	Tape Cutting Motor Speed	Set the rotation speed of the tape cutting motor	U	200	[P177 Setting Value]	500

2-5. Error Codes

No.	Item	Content
E102	Tape Cutting Stepping Motor Over-current Fault	① Turn off the system power and observe whether the tape cutting stepping motor is stuck. If stuck, first troubleshoot the head mechanical fault. ② Turn off the system power, check whether the tape cutting stepping motor interface is loose or disconnected, restore it to normal and restart the system. ③ Turn off the system power and check whether the cutter is worn. ④ Confirm whether the tape being cut is too thick. ⑤ Turn off the system power and check whether the blade interference is too large. ⑥ Adjust the speed in P187, cut the tape again, and confirm whether the error still occurs. ⑦ Remove the tape and confirm whether the cutter runs idle without error. ⑧ Confirm whether the tape cutting motor returns to the uppermost origin position after performing the tape cutting action. ⑨ If it still does not work properly, replace the electrical control box or tape cutting stepping motor and contact the after-sales service.
E103	Tape Cutting Stepping Motor Current Sampling Abnormality	Please contact the after-sales service.
E104	Tape Cutting Stepping Motor Encoder No Z Signal	① Turn off the system power, check whether the tape cutting stepping motor encoder interface is loose or disconnected, restore it to normal and restart the system. ② Turn off the system power, check whether the 1pin blue wire of the tape cutting stepping motor encoder interface pin and cable are abnormal. ③ If it still does not work properly, replace the electrical control box or tape cutting stepping motor and contact after-sales service.
E105	Tape Cutting Stepping Motor Encoder No AB Signal	① Turn off the system power, check whether the tape cutting stepping motor encoder interface is loose or disconnected, restore it to normal and restart the system. ② Turn off the system power, check whether the 2pin orange wire and 5pin brown wire pin and cable of the tape cutting stepping motor encoder interface are abnormal. ③ If it still does not work properly, replace the electrical control box or tape cutting stepping motor and contact after-sales service.
E106	Tape Cutting Stepping Motor No Output	Please contact the after-sales service.
E107	Tape Cutting Stepping Motor Stall	① Turn off the system power and observe whether the tape cutting stepping motor is stuck. If stuck, first troubleshoot the head mechanical fault. ② Turn off the system power, check whether the tape cutting stepping motor interface is loose or disconnected, restore it to normal and restart the system. ③ Confirm whether the tape being cut is too thick. ④ If it still does not work properly, replace the control box or tape cutting stepping motor and notify after-sales service.
E108	Tape Cutting Stepping Program Mismatch	Please contact the after-sales service.
	Tape Cutting Stepping Undefined Alarm	Please contact the after-sales service.

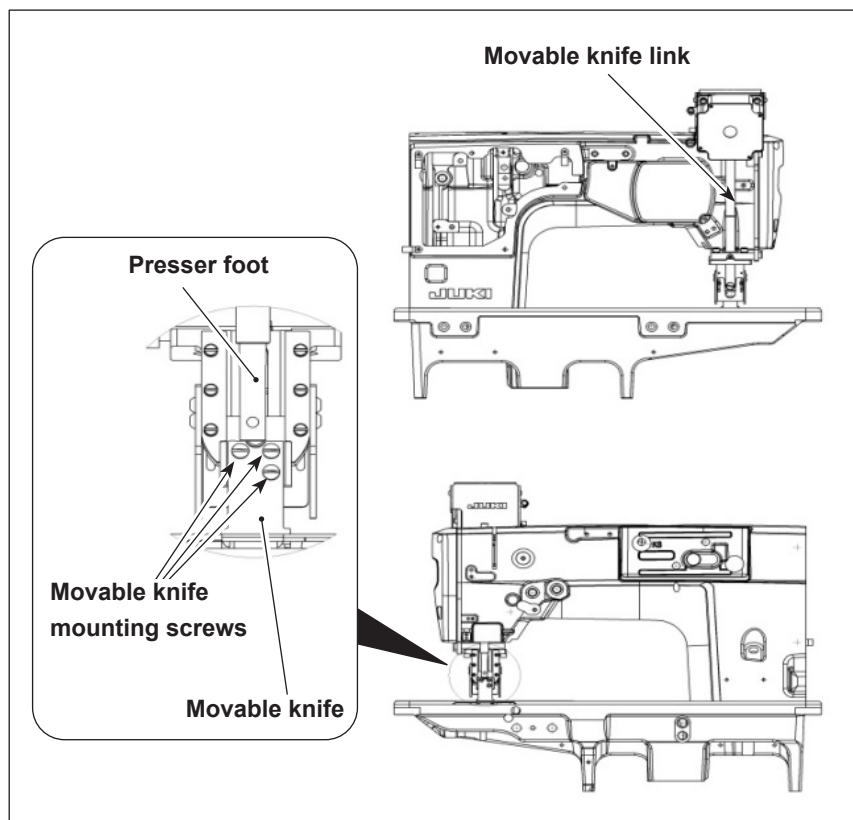
3. REPAIR AND MAINTENANCE

3-1. Repair

3-1-1. Common Problems and Solutions

No.	Problem	Reason	Solution
1	Knife cannot cut the tape.	1. Poor matching of moving and fixed knives 2. Severe wear of the moving knives 3. Motor over-load 4. The cutting belt is too thick	1. Refer to "1-2-2. Installation of Cutter Assembly p.5". 2. Change movable knife, refer to "3-1-2. Change of The Moving Knife" p.14. Adjust knife pressure, refer to "1-2-2. Installation of Cutter Assembly p.5". 3. Refer to "2-5. Error Codes (Code E107)" p.13. 4. Reduce speed and try again.
2	After changing the movable knife, cannot cut the tape in a short time.	Poor knife pressure adjustment, causing edge curling damage	Change movable knife, refer to "3-1-2. Change of The Moving Knife" p.14 . Adjust knife pressure, refer to "1-2-2. Installation of Cutter Assembly p.5" .

3-1-2. Change of The Moving Knife

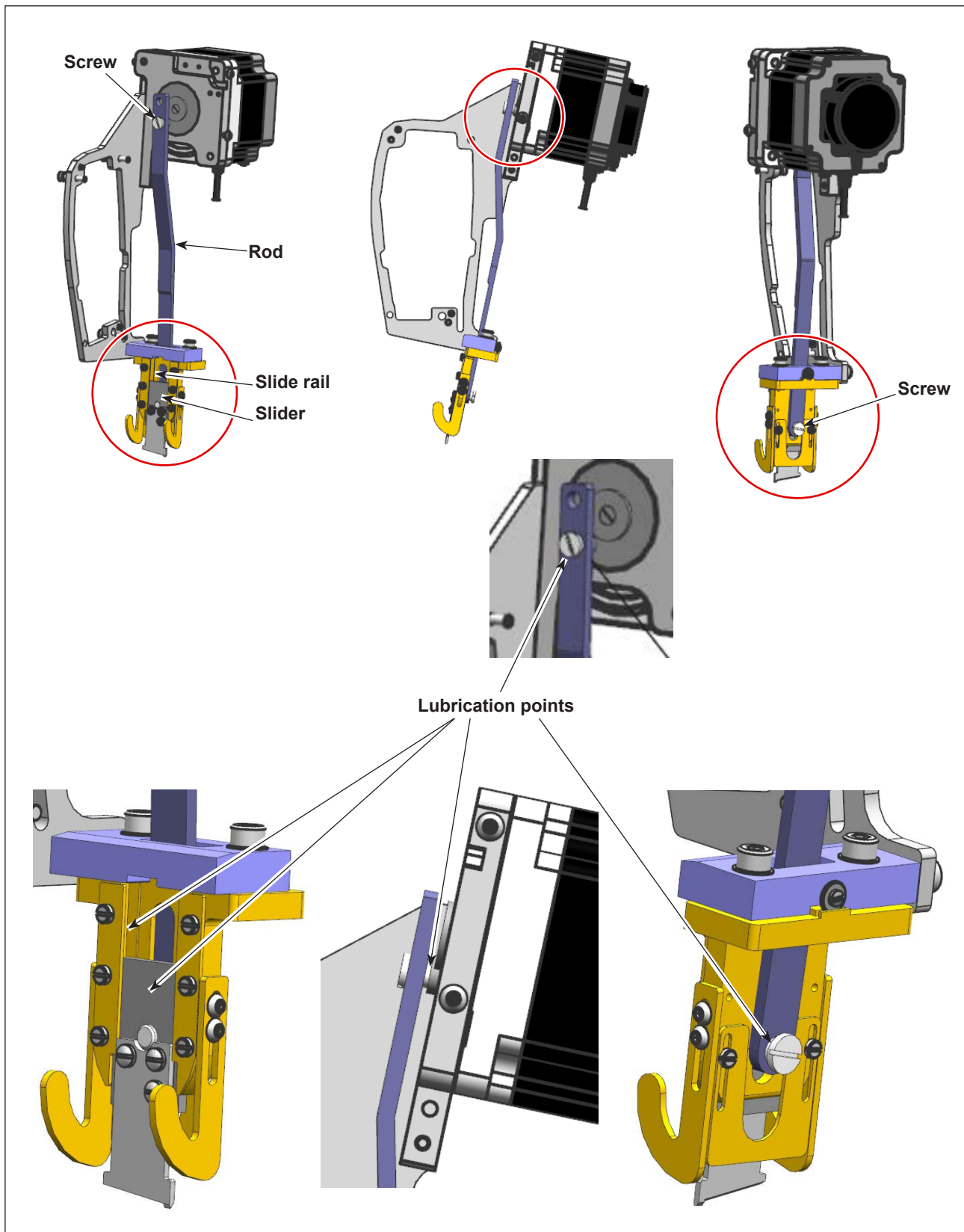


Remove the presser foot and lift the presser foot lever to the highest position. Push the movable knife link to lower the movable knife to the lowest position and expose the movable knife mounting screw. Remove the mounting screws of movable knife and change movable knife. After replacing movable knife, confirm the position of movable knife according to **"1-2-2. Installation of Cutter Assembly p.5"** and carry out cutting test. Lower the presser foot lever and refit the presser foot.

Caution
Then replacement must be operated by professionals.

3-2. Maintenance

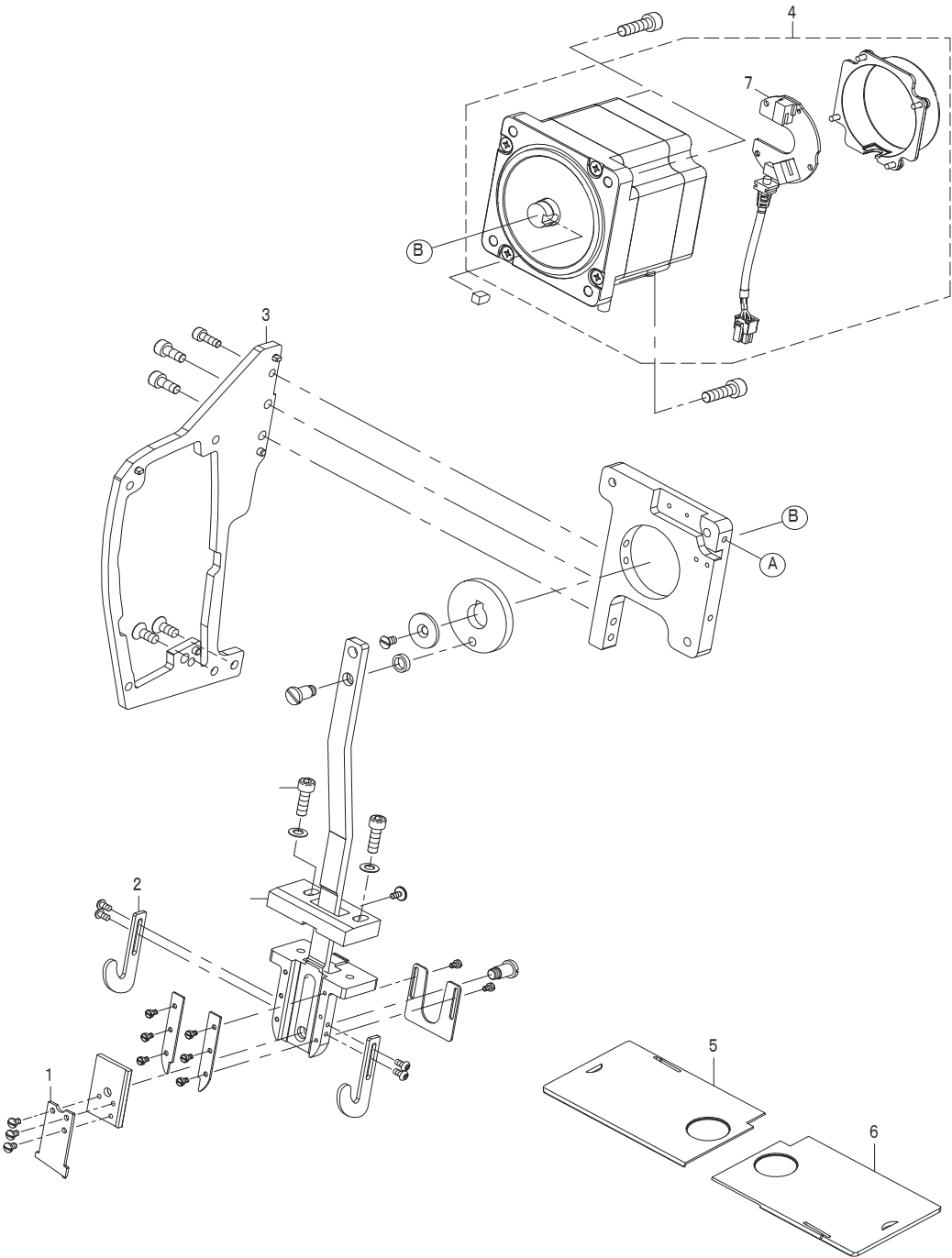
Lubricate the contact areas between slide rails and sliders, and between screws and links, using JUKI Grease A "40006323" once per month.



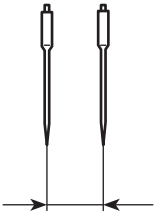
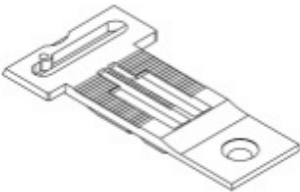
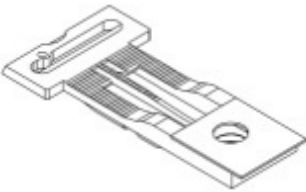
4. SUPPLEMENTARY PARTS MANUAL

4-1. Optional Accessories

No.	JUKI Part No.	Qty
1	40232788	1
2	40232789	2
3	40300680	1
4	40294642	1
5	40319703	1
6	40319702	1
7	40299097	1

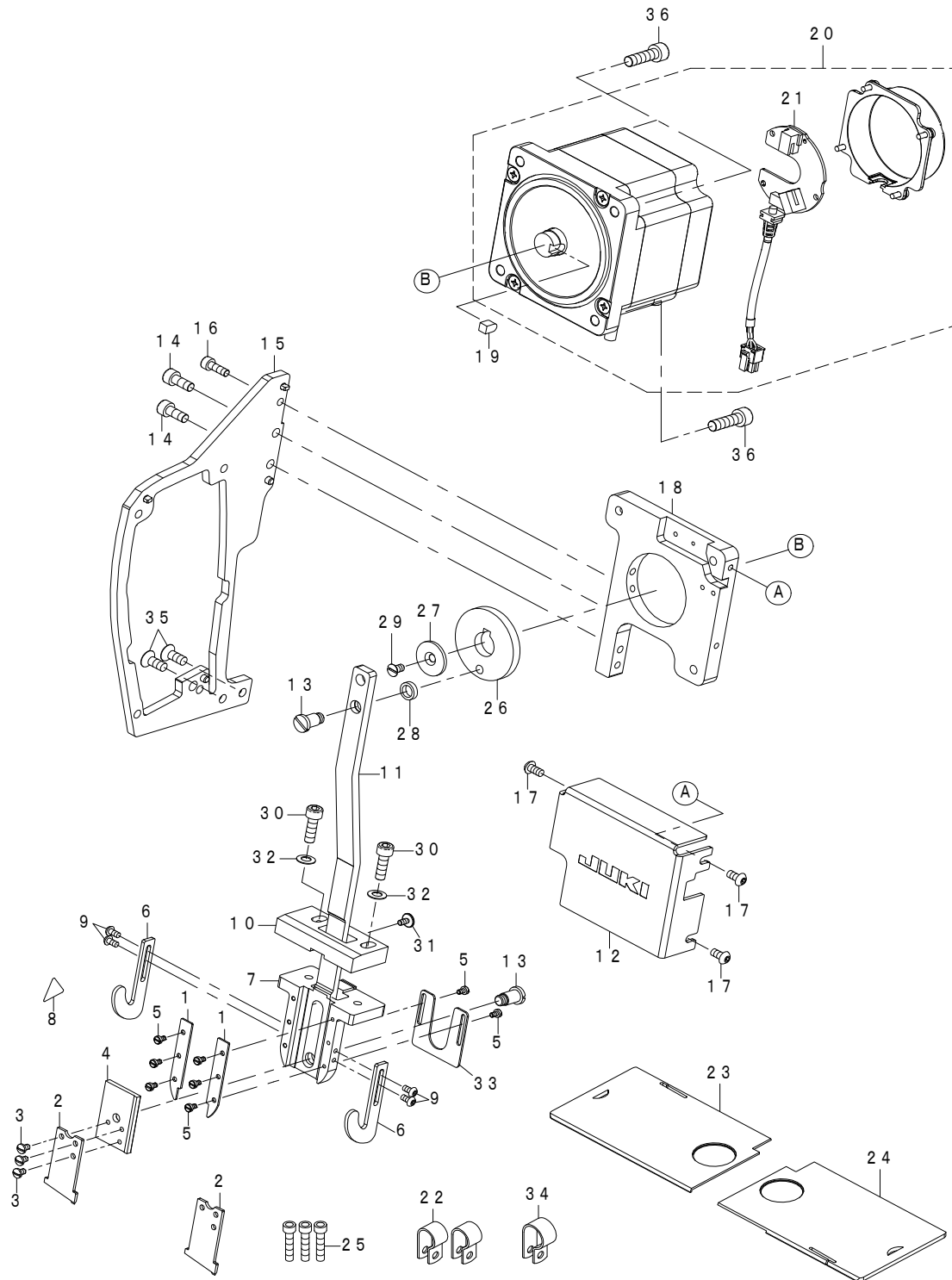


4-2. Options Gauge Parts List

Needle gauge size			Standard Needle Plate	Tape Guide Groove Needle Plate
Code				
	inch	mm	Part No.	Part No.
D	3/16	4.8	40240834	40246475
E	7/32	5.6	40240833	40246476
F	1/4	6.4	40240832	40246477
G	9/32	7.1	40240835	40246478
H	5/16	7.9	40240836	40246479

5. PARTS LIST

5-1. AT-35 The Tape Cutter Device for Double-Needle Machine



REF.NO	NOTE	PART NO	DESCRIPTION	品 名	Qty
1		402-41197	DRIVING_KNIFE_GUARD	動メスガイド板	2
2		402-32788	DRIVING_KNIFE	動メス	2
3		402-41198	SCREW	ねじ	3
4		402-41196	SLIDER	スライド板	1
5		402-41174	SCREW	ねじ	8
6		402-32789	FINGER_GUARD	指ガード	2
7		402-41176	TOOL_APRON	メス土台	1
8		CM-3002000-01	FINGER INJURY CAUTION LABEL (16)	指けが注意シール (16)	1
9		402-41172	SCREW M3 L=5	ねじ M3 L=5	4
10		402-41195	SLIDE_BLOCK	スライドブロック	1
11		403-16683	LINK	リンク	1
12		402-41168	MOTOR_COVER	モーターカバー	1
13		402-41175	SCREW	ねじ	2
14		402-41177	SCREW M5 L=12	ねじ M5 L=12	2
15		403-00680	BASE_PLATE	ベース板	1
16		402-41180	SCREW M4 L=12	ねじ M4 L=12	1
17		402-41181	SCREW M4 L=6	ねじ M4 L=6	3
18		402-41186	MOTOR_BASE	モーターベース	1
19		402-40839	KEY	キー	1
20		402-94642	MOTOR	モータ	1
21		402-99097	TP MOTOR ENC PCB ASSY	テープカッターモータエンコーダ基板組	(1)
22		HX-0015000-0D	CLAMP	R型クリップ	2
23		403-19703	SLIDE_PLATE_L	左スライド板	1
24		403-19702	SLIDE_PLATE_R	右スライド板	1
25		402-41187	SCREW M4 L=20	ねじ M4 L=20	3
26		402-41204	DRIVING_RING	駆動リング	1
27		402-41202	RING	リング	1
28		402-41201	BUSH	ブッシュ	1
29		402-41203	SCREW	ねじ	1
30		402-41193	SCREW M5 L=16	ねじ M5 L=16	2
31		402-41171	SCREW	ねじ	1
32		402-41194	DISC_SPRING	ディスクスプリング	2
33		402-41173	FINGER_GUARD_PLATE	指ガード板	1
34		HX-0015000-0F	CLAMP	R型クリップ	1
35		402-46360	SCRWE	皿ねじ	2
36		402-41170	SCREW M6 L=20	ねじ M6 L=20	3